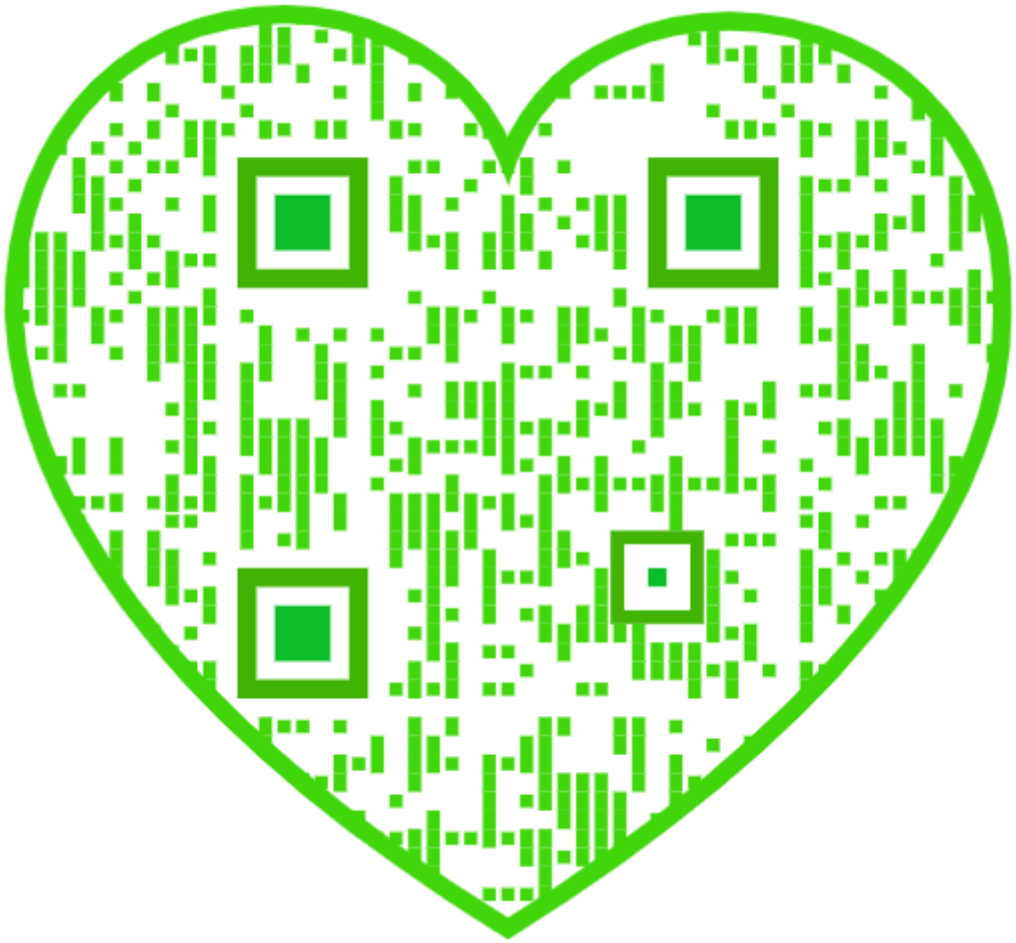

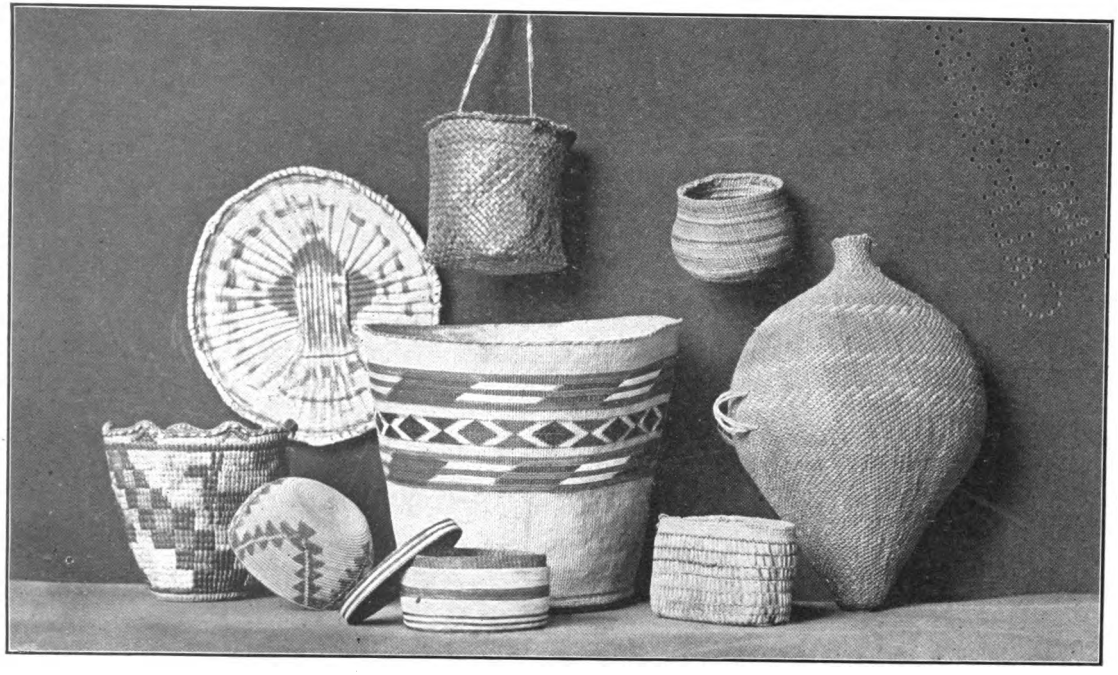

Plate I. Indian Baskets.

PRACTICAL AND ARTISTIC

BASKETRY

BY

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Formerly Principal in the Minneapolis Schools

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Basketry in the Public Schools.

FOREWORD.

"Ornamental learning is a thing of the past and industrial and practical development is taking its place."

It is not the purpose of the author to discuss the advisability of giving to every child an opportunity to unfold the mental, moral, and physical faculties simultaneously, thus giving an ideal and symmetrical education, but to suggest some of the ways by which these desired results may be attained.

There are few who will deny that some training is needed, besides what the child now has, whereby he may be led to think, observe, compare, invent, and classify for himself.

It should, however, be thoroughly understood by the patrons of the public schools that it is not the object of this training to teach their child any one trade. This would be unwise and impossible; but it should seek to give him a

little knowledge of as many sides of industry as possible, and to familiarize him with common substances and their physical properties; to make him a doer, instead of an onlooker, and to teach him to build character, as well as to construct articles of use and beauty.

All educators must admit that many mistakes have been made in trying to solve the problem of putting a child's senses and hands into harmonious relation with his mind.

Perhaps one of the most harmful mistakes possible is giving to young, immature children too difficult or advanced work. It is a serious mistake to give to the child just entering school work that is more suited to his older brother and sister. The result must necessarily be crude and unsightly. He can but feel that he has failed, and consequently he loses interest. Give him something that he can do well, and then require some standard, some degree of excellence. When this is reached introduce him to something higher, thus leading him from one success to another.

In all work the quality and not the quantity should be considered. This does not mean that we should expect perfect results; but it does mean that poor work should not be praised. The child will usually estimate his own work correctly, although he may not be able to see

why he failed. It is here that the wise teacher will bridge the difficulty successfully by commending the effort and suggesting the way by which better results may be obtained in the future.

Another mistake is made by giving the child too much work. This is done by allowing the classes to work on an exercise too long at a time, or in giving the same exercise at too frequent intervals. The first is apt to overtax the child, the latter prevents the desire for more, and both endanger his appreciation and interest. If the teacher will bear this in mind, she will find that the child is stimulated to do his best because of his present happiness in doing the work and the thought of that which is to follow.

Although at first results may not be entirely satisfactory, one must remember the ultimate aim of the exercise is the development of the child, and not the making of articles to exhibit for the glorification of teachers and supervisor.

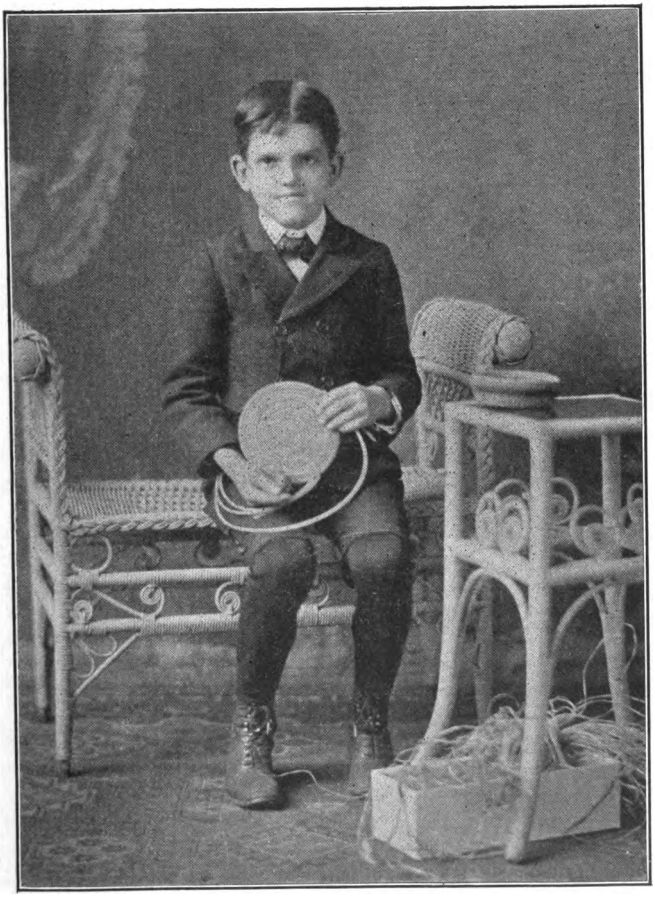
In order to obtain the best results in the development of the child, it is necessary to enlist the sympathy and co-operation of the parents, who are always ready to respond and enter into any scheme that furthers his advancement. A piece of work well done taken into the home

will generally create an interest in the child's whole school life.

In selecting work that is suitable for the school-room, many things must be considered —limited time, lack of space, size of the material used, and the necessary tools.

Upon investigating different material, we find that vegetable fibre offers many advantages over others, among which are its lightness, cleanliness, durability. This material may, in many cases, solve the expense problem, as a great majority of country schools will be able to provide their own supply. The variety of articles that can be made from it is so great that there will be no danger of an over-supply, which is detrimental to the interest in any kind of work. The waste-basket, work-basket, and many other articles are in great demand on account of their useful and decorative qualities. One of the chief difficulties has been to provide industrial work that would be suitable for mixed schools, and the strongest argument in favor of the introduction of basketry is the interest which is manifested in it by the boys. They seem to enjoy it even more than the girls, and the prospect of working on a basket has often proved an incentive to study when everything else has failed.

There is such a fascination about basket-



Oh, this is fun!

work! One seems to put himself into the construction. The pupil has a tangible proof of conscientious, careful work in the completed article. He feels that it is worth while to try, and the remark, "Oh, what's the use?" is often eliminated from the boy's vocabulary.

But basketry, although it has so many recommendations in its favor, and will probably push its way to the front, is only one of the many occupations that should find a place in our course of study. With so much native material that may be used, and such an unlimited number of beautiful articles that may be made, it gives the child a wonderful opportunity to discover, reproduce, and create.

I.

Introduction.

The necessity for proving the value of industrial education is past. The country knows and recognizes this value, as do the best educators of all nations. Nor is it any longer necessary to urge that weaving, basket-making, and other simple methods of employing the hand of the child, may be easily and profitably introduced into the schools of to-day, without interfering with the ordinary plan of work, and without diminishing the so-called scholarly attainments of the children.

Over and over again has it been proved in city and country schools that the children will make baskets and weave mats, sew and knit, draw and paint, and do all deftly, and learn just as much arithmetic, spelling, reading and writing, as children in those schools where none of these things are taught. And the glory of it all is that they have done it all so much more easily, so much rest and good cheer

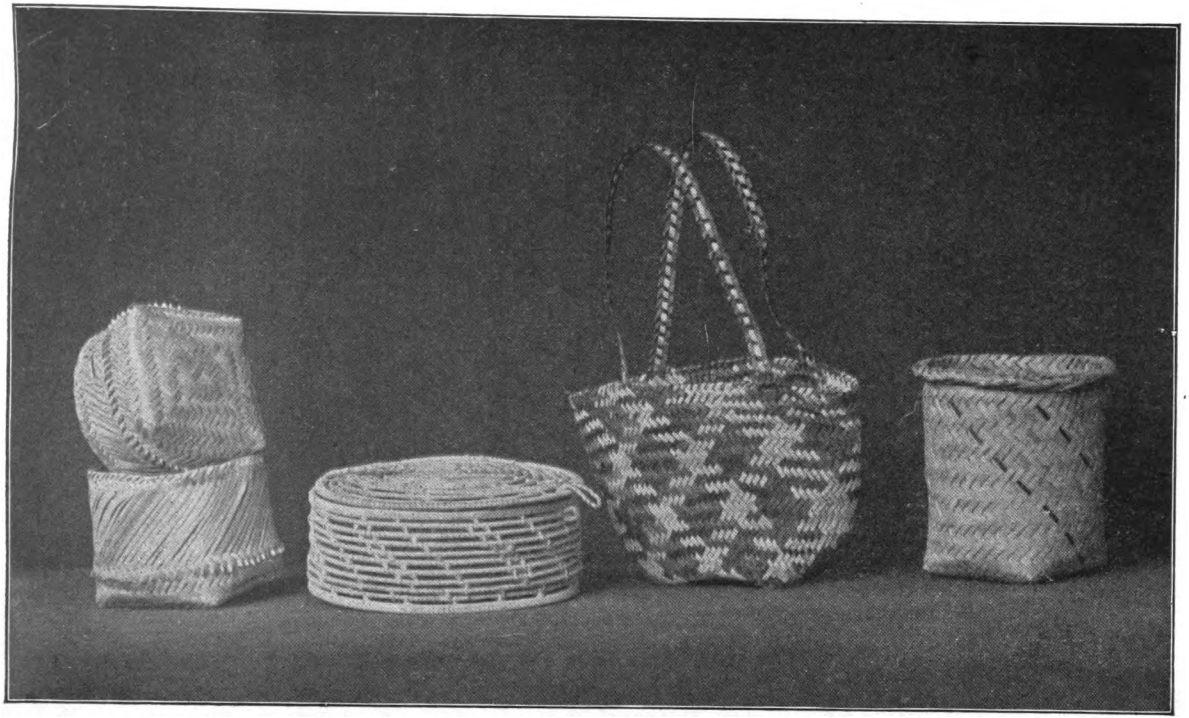


Fig. 2.—Palm Baskets.

have come in with the employment of the hand, that the memory of even learning definitions is no longer weariness and pain.

There are many, however, who acknowledge the advantage of this work, and would gladly give their pupils the pleasure and profit which it brings, who do not attempt it, simply because of certain homely practical difficulties in the way. They have not themselves had instruction, and there are many little matters of manipulation, trifling in themselves, and easily overcome, when one sees how, that make the wise teacher hesitate. She does not want to undertake to teach what she does not thoroughly understand. To meet her need this little book is published. It gives simple, practical instruction as to ways and means.

But there is another difficulty that is preventing the children, especially of the country schools, from getting the pleasure and profit of this training of the hand and eye. The materials cost too much. In schools where it is difficult to get necessary books the teacher does not dare to ask for an additional appropriation for raffia, wool, etc. But right here in the country are materials at hand in abundance, if teacher and children only knew how to use them. Hundreds of teachers will gladly welcome practical suggestions which enable them

to avail themselves of these resources. And the rushes, the corn husks and the grasses which they have themselves prepared are far more valuable from an educational standpoint than any supplies which come without effort. There is perhaps no more urgent need than the power to utilize for comfort and beauty the common things that are going to waste right about us. To teach this lesson is the mission of this book.

Maria L. Sanford,
Prof. of Rhetoric and Elocution, University of Minn.

II.

Materials.

IMPORTED MATERIAL.

Rattan is a kind of palm which grows in the forests of India, twining about trees and hanging from the branches. It sometimes attains the length of a thousand feet. It is imported into this country stripped of leaves and bark, and split into round or flat strips of various sizes, which are called reeds, but as rattan is the more *common* name, we shall use it throughout the book. The reeds are numbered by manufacturers, No. 1 being the finest.

Raffia comes from the island of Madagascar, and is the Malagsy name for the palm. A leaf of this palm produces long green divisions, two to five feet in length, like the leaf of the sugar cane, and after being dried in the sun assumes a straw color.

Palm Leaf.—The palm leaf is a product of a palm in Cuba. It is imported in the leaf and prepared for weaving purposes in the factory

by being bleached from its original greenish color to a pure white. It is then split into strips of different widths and numbered, No. 1 being the finest.

Rush.—The flat or braided rush, which is imported by dealers in basket material, comes in green and brown. It is very beautiful when combined with rattan.

Hemp is imported from the Philippine Islands and is used for making ropes. It can be colored any desired shade, and is very useful either as a thread or for a soft coil.

NATIVE MATERIAL.

We are not dependent upon the imported materials, as the beautiful Indian baskets will testify. While it is impossible to get the same material that the Indians use, there are few localities but furnish a supply of material from which we can make articles of use and beauty. In nature's storehouse will be found beautifully colored material, so that the vexed question of Vegetable versus Diamond dyes will, in a measure, be eliminated.

Willow.—The small twigs and branches of the common willow that grows near streams and marshy places can be utilized by those living near them. See chapter on Native Willows.

Cat-tail Leaves should be gathered before they mature. The time will vary in different sections, but probably some time in July. They should be slowly dried. The Indians split the leaves before drying, and when about to use them, roll them against the leg with the palm

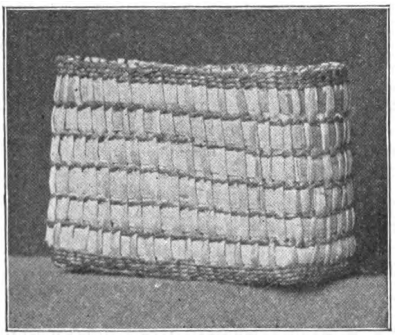


Fig. 3.--Cat-tail Basket.

of their hand. The leaves can be used as spokes and bands in baskets. If braided, they can be used instead of the braided rush. The braid can also be sewed into a simple, round basket.

Flags and Rushes.—These can be used in the same way as the cat-tail leaves. At the base of the flag leaves will be found gorgeous colors, which can be used to good advantage in giving a touch of natural coloring to some basket.

Straw.—Rye, oat and wheat straw can be made to do service in this work. The rye straw

is the best for braiding, as it has longer joints than oats and wheat; the other two can be used for a soft coil.

Grasses.—Wire grass, which grows so abundantly in many places, makes very beauti-

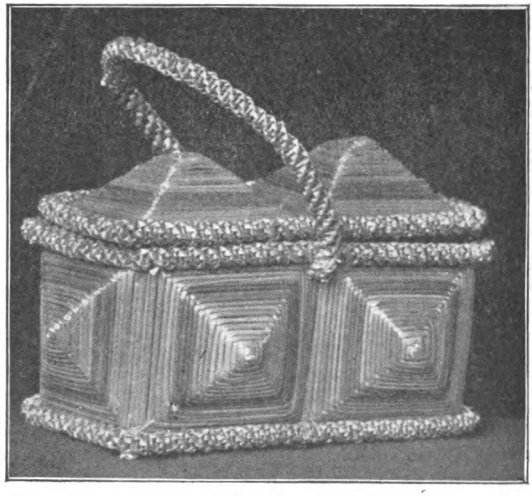


Fig. 4.—Basket made of Straw.

ful baskets, plaques, and bags. Many other grasses furnish one of the most prolific sources of supply. The stalk is more often used than the leaves. One soon learns that if certain grasses are gathered too early they are brittle. Some grasses should be cut while they are in the seed, and others when ripe. It will require long study and experiment to obtain the best

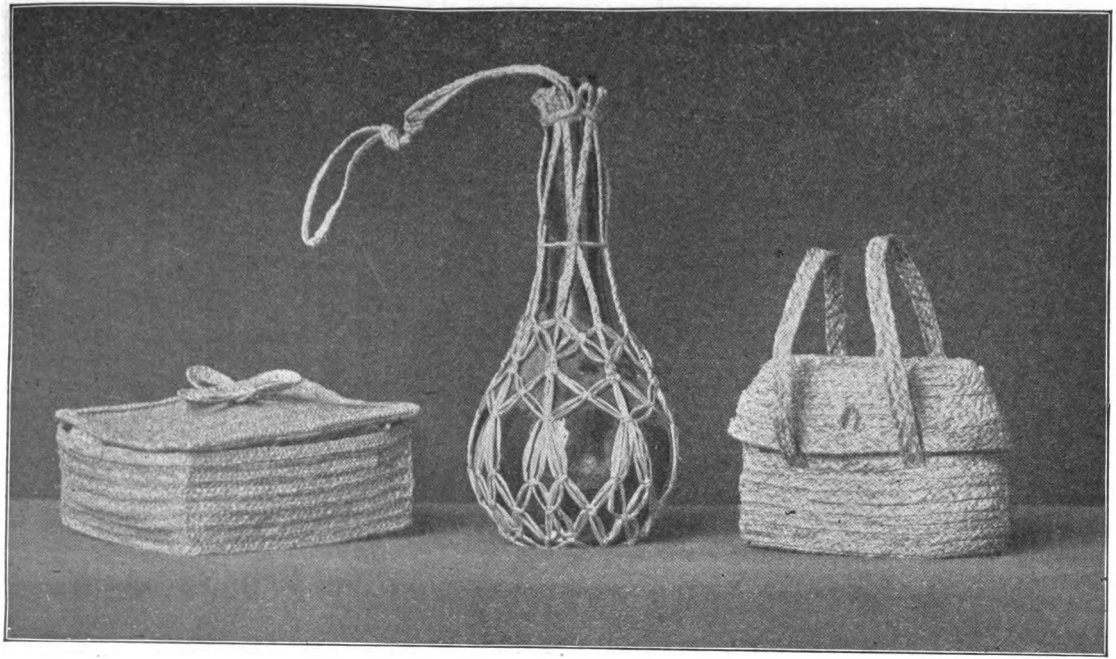


Fig. 5.—Baskets made of braided raffia.

results in new materials. The work is now in its early stages, and there is still much to learn.

Corn Husks.—The fine inner corn husks can be put to a variety of uses. They are rich in color; among them can be found dark reds, brilliant pinks, purples, pea green and dark yellow. Red pop corn gives some of the richest tones.

Palmetto.—If the palmetto buds are separated and allowed to dry and bleach for several days in the sun, they can be split with a pin into any width desired and used in the same way as the palm.

Pine Needles.—The long pine needles that grow in the Southern States make beautiful baskets. They may be gathered when fully ripe and dried, or those may be used that have fallen from the tree to the ground. The latter will be found in soft brown shades.

Maiden-hair Fern.—The stems of this fern may be used when a little black is needed. They are unfading and are of a glossy black.

Willow Bark.—The bark from the willow twigs when dried is brown. A few rows of this bark worked into a rattan or willow basket would produce a pleasing effect.

Cedar Bark.—The Indians use a large quantity of this bark for basket-making. The foundations of many of their finest baskets are

made from it. If shaved thin and cut into one-quarter-inch wide strips, it could easily be made into a very attractive basket. See Plate I.

Honey-suckle Vine.—I see no reason why this vine, that grows so profusely in many of the Southern States, could not be utilized for basket work. It could be peeled in the same way as the willow twigs, and might take the place of rattan for some purposes.

I trust enough has been said to arouse an interest in gathering and adapting new material. There is a large field for the enthusiastic worker.

The author would be pleased to hear of any satisfactory results along these lines.

EXPLANATION OF PLATE I.

No. I. The Klikatat Indians live inland, south of Mt. St. Helens, and belong to the Sabaptin family.

There are but few of the older women who are now making baskets, and who wonders, when he reads the description given by Mrs. Velina P. Molson of the materials used in their manufacture.

"To gather, prepare and manipulate the raw material meant time and arduous labor. The foundation consists of roots of young spruce

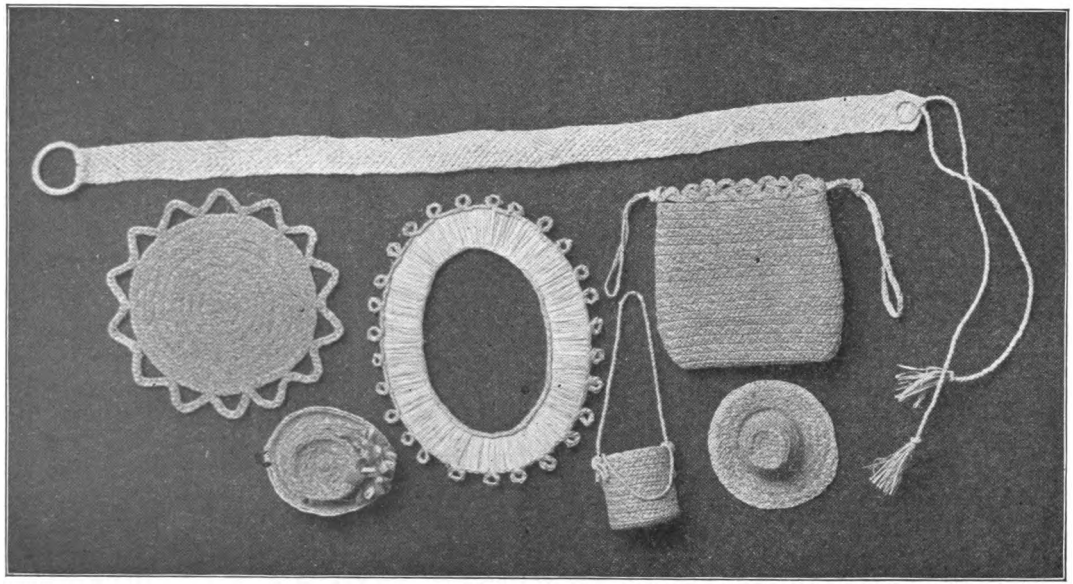


Fig. 6.—Articles made of Raffia.

and cedar trees; it was macerated and torn into thread-like shreds, and soaked for weeks and months in water to rid it of any superfluous vegetable matter and to render it strong and pliable. The ornamentation is almost all made of Xerophullum Tenax, which is commonly called "squaw-grass." It grows on the east side of the Cascade Mountains, and can only be gathered during the late summer, when the snow has melted and the grass has matured."

No. 2. The design of this plaque is said to represent a railway engine just emerging from a tunnel and is called a Moki God. The row of color near the edge is supposed to be the track.

No. 3. "The Digger Indians" are the remains of a people who are fast passing away. They may be found in the foot hills and slopes of the Sierra Nevada. Most of them dress in the civilized costume, though the majority still inhabit the rude Wickiups of their forefathers.

The collector from whom this basket was purchased said none of their baskets are now to be had, except from private collections.

No. 4. A very effective basket, made from cedar bark in brown and black.

Nos. 5 and 6 are Alaskan baskets, made from some tough grass. The ornamentation is of a different material and only appears on the outside.

III.

Rattan Weaving.

Tools.---A sharp knife, a pair of strong, sharp shears, a long, straight awl, or large knitting needle, and a tape line are all that are needed.

Terms.—The *spokes* are the ribs or upright pieces in a basket; they should be one or two sizes larger than the weaver. The *weaver* is the finer rattan that is wound in and out between the spokes.

Weaving.—The simplest form of all is the

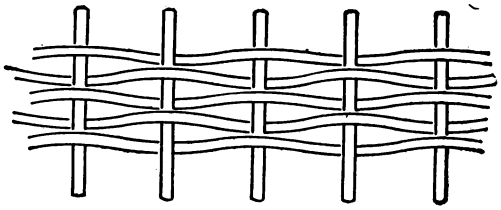


Fig. 7.—Under and Over Weaving.

"under and over" weaving, with one weaver and an odd number of spokes.

The same effect is produced with an even number of spokes by using two weavers. Weave around with one and then the other, allowing the second weaver to go under the spoke that the first went over, and over the spoke that the first went under. Fig. 8.

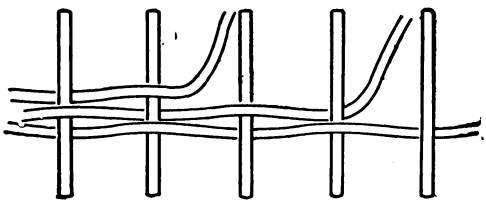


Fig. 8.—Two Weavers, one following the other.

Double Weaving.—Two weavers are used together. Whole baskets can be made with this weave. It is very effective used as bands on plain rattan baskets.

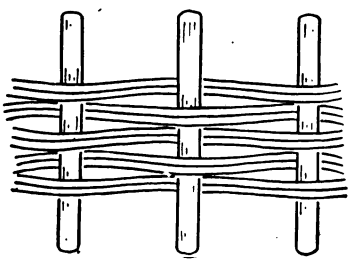


Fig. 9 —Double Weaving.

Pairing.—Two weavers are inserted behind two succeeding spokes and crossed between

them, bringing forward the under weaver each time. This can be used on an odd or an even number of spokes. It makes a good finish for a mat or basket, and can be used on the sides of baskets to divide different weaves.

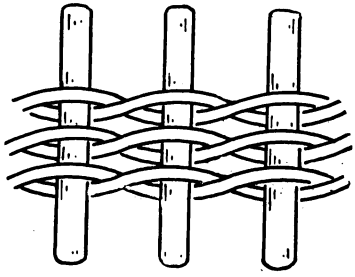


Fig. 10.—Pairing or Twining.

Triple Twist.—Three weavers are placed behind three consecutive spokes, starting with the back one—the one at the left—bring it forward to the right over the two other weavers and be-

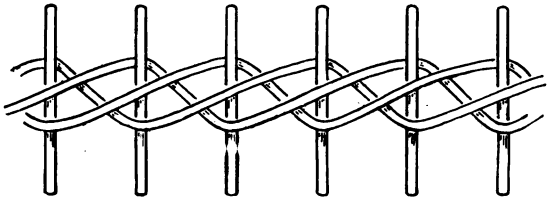


Fig. 11.—Triple Twist.

hind the third spoke, proceed in this way, over two and under one.

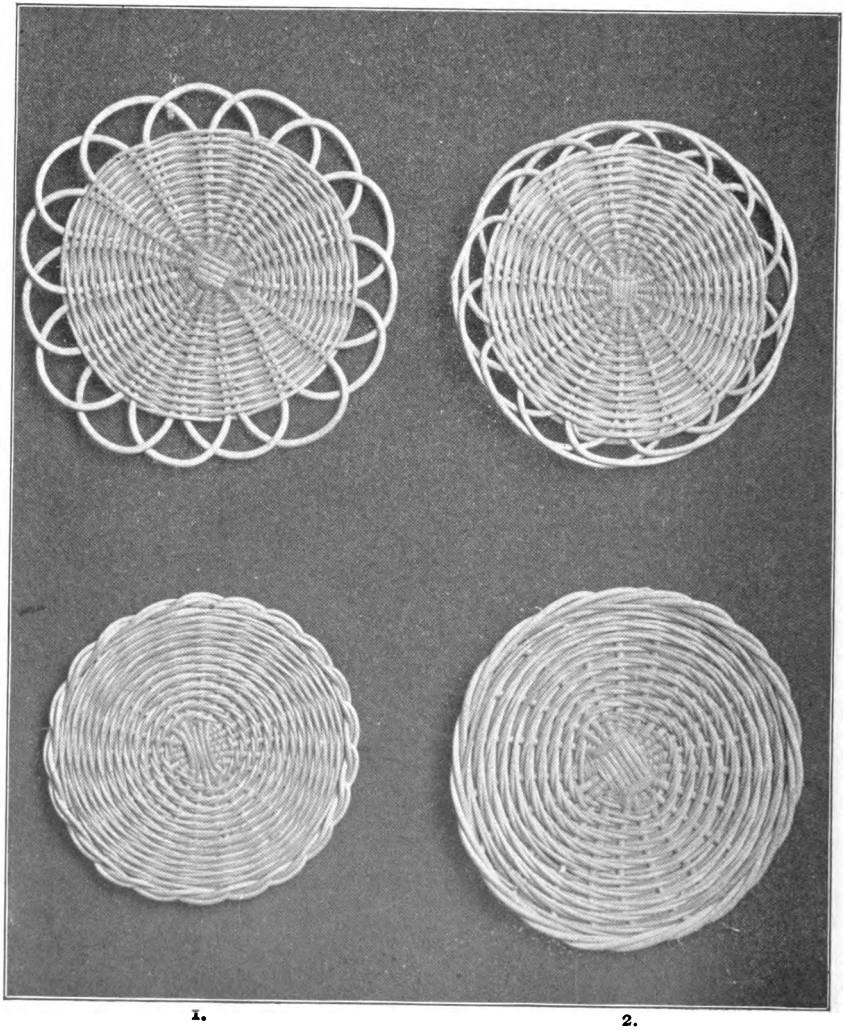
This is a very desirable weave, as it entirely covers the spokes. For this reason it is used to cover places where broken spokes have been replaced, and at the bottom of baskets where additional spokes have been inserted. It also makes a strong finish for the top of a large basket.

Amount of Material.—The rattan varies so in length that it is impossible to indicate by the number of strips the quantity needed for a given basket.

In estimating the length of spokes, decide on diameter of bottom and height of sides. The spokes should be long enough to extend up both sides and across the bottom, allowing on each end of spoke not less than three inches for a simple border and more for a more elaborate finish.

If the bottom of the basket is four inches in diameter and three inches high, it will require eight spokes sixteen inches and one nine inches long. When the eight spokes are crossed in the center, four on each side, and the one half spoke added on one side, there will be seventeen spokes radiating from the center. With this number the spokes are more easily kept in place, and the desired shape is obtained with less difficulty.

In beginning rattan mats and baskets, one



1. 2.

Fig. 12.— Rattan Mats.

3. 4.

strand of raffia may be used in binding the spokes together and weaving the rest of the strand around the center. The raffia is more easily handled and it makes a neater center.

See Nos. 1, 2, and 3, Fig. 12.

IV.

Rattan Mats.

It is not the purpose of this book to exhaust the subject of rattan work, but only to give a few hints and suggestions that may enable a beginner to go on with the work.

Rattan should not be soaked in water for any length of time; being porous, it only needs to be dipped two or three times to make it pliable.

A mistake is often made by not using enough spokes to make the work firm and durable. A close border cannot be made in a satisfactory manner if the spokes are too far apart.

Mat.—Cut six pieces of No. 3 rattan 12 inches long, and one piece 7 inches long. Shave

Fig. 13.—Split Spoke.

to a short point one end of three long pieces and one end of the short piece. Make a small

slit through the center of the other three. Push the three pointed pieces through these slits, one at a time, down to the center. When one is in place, the others can be easily pushed in on either side. Hold firmly in the left hand with the split spokes in a horizontal position. Insert the pointed end of the short piece through the slits in the horizontal pieces between the first and second vertical spokes, taking care that it only extends through to the other side of these spokes. See Fig. 14.

Place the large end of a strand of raffia in front of the upper vertical spokes with the end

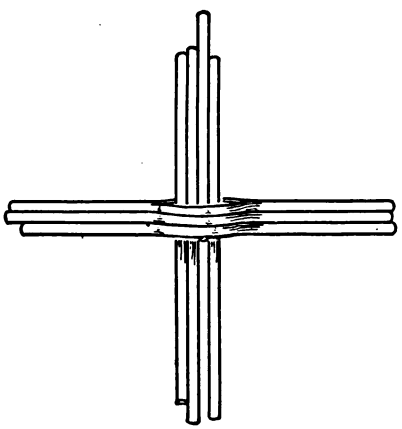


Fig. 14.—Spokes Threaded for Round Base.

toward the left. Bring this strand down behind the horizontal spokes at the right, then

over the lower vertical spokes and up behind the horizontal ones at the left, then down over the horizontal spokes at the left—this binds the first end of the raffia—behind the lower vertical

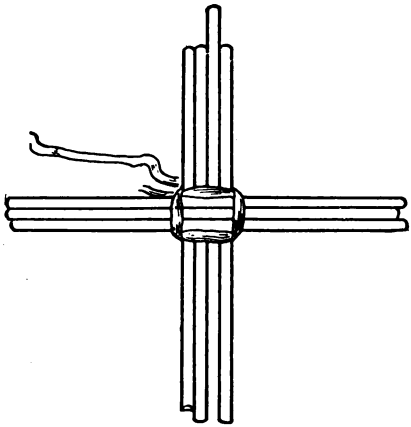


Fig. 15.—Starting Weaver.

spokes up over the right horizontal ones, across behind the upper vertical spokes. This brings the weaver to the upper left-hand corner. Begin to weave over and under around the center from left to right, pulling the weaver down close to the center. Fig. 15.

Great care must be taken that the spokes are evenly separated by the time the third row is woven, so that the spokes come out in a straight line from the center.

When one strand of raffia has been used, a

weaver of No. 1 rattan is inserted behind a spoke and the weaving continued.

It will be necessary to hold on to the end of the rattan weaver, to prevent its slipping, until the weaver passes over it in weaving the second row. This will bind it firmly. Bring each row down to the preceding one. The rattan should not be drawn too tight, as the mat must be kept flat. If a full length weaver is used, it will

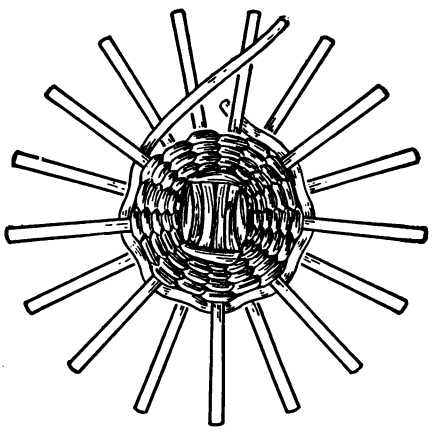


Fig. 16.—Beginning to Weave with Rattan.

make a small mat without splicing. When the mat is finished, the end of the weaver is passed under the last row of weaving and behind the next spoke. Then it is ready for the border.

A center may be begun without slitting the

spokes. They can be simply crossed and bound together, as has already been explained. This is not so desirable, since it is more clumsy, especially for mats.

When an open center is made and the spokes used in groups, they should always be crossed. In this case the weaving does not begin close to the center so the thickness is not so apparent. See No. 4, Fig. 24.

Heavier mats may be made by using the pairing stitch or the triple twist. See Nos. 3 and 4, Fig. 12.

EXPLANATION OF PLATE II.

Nos. 1 and 2 are Hoopa squaw caps, sometimes called Shasta baskets, because some of the material—squaw-grass—from which they are made, grows on Mt. Shasta. They are nearly all of the same shape and size, but no two are ornamented in the same way.

Nos. 3 and 5. The Skokomish Indians occupy the upper shores of Puget Sound. "This weave is growing rarer as the years go by. The weavers have gradually decreased in numbers, until now the tribe is almost extinct." On all the baskets made by these Indians will be a row of animals around the top. They are all alike, with the exception of the curl in the tail.

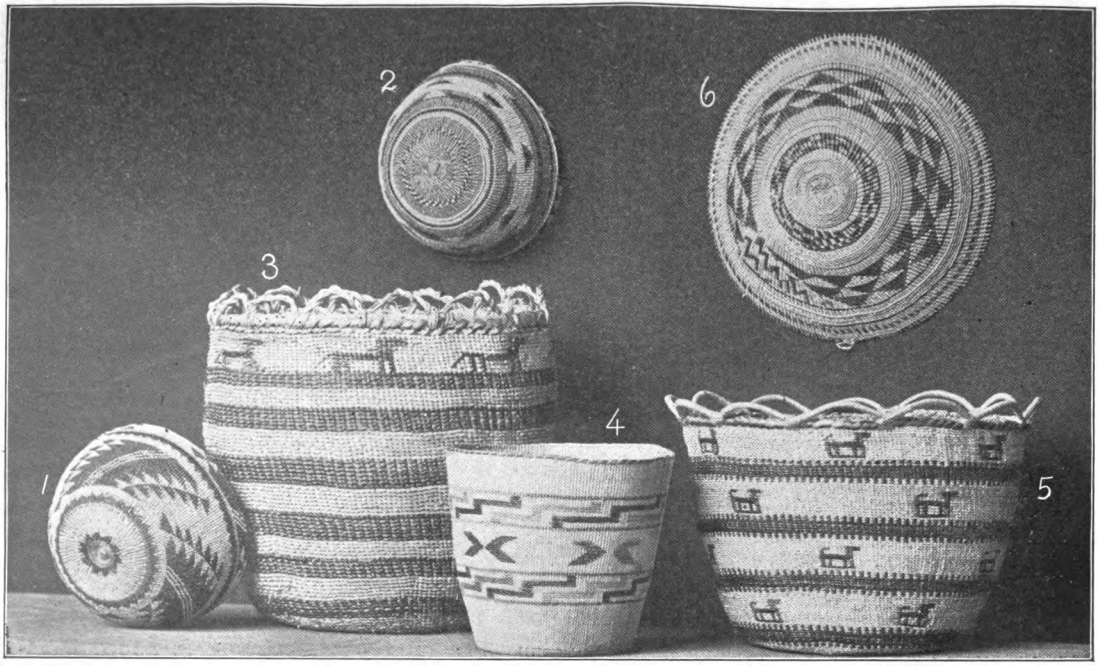


Plate II. Indian Baskets.

If the tail curls up, it is supposed to be a dog; if down, a wolf.

George Wharton James, to whom I am indebted for much of the information regarding these baskets, says: "Of the few good Skokomish weavers left, Sarah Crew is said to be the best, and she will only work when the weather is damp and rainy, as she says otherwise her grasses crack and split." These baskets are made of squaw-grass, and some other strong material. The grass is woven on the outside for ornamentation, and takes on a high polish with use and age.

No. 4 is like No. 5 in Plate I, only smaller.

No. 6 is a Pomo meal tray.

V.

Borders.

Open Border, No. 1.—The spokes should extend three inches beyond the last row of weaving. Measure carefully and cut them of a uniform length. Shave the ends so that they will readily push down between the weavers.

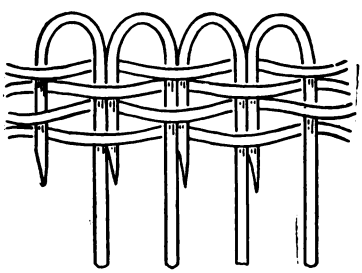


Fig. 17.— Open Border No. 1.

Hold the spokes in water until pliable. Spoke No. 1 is pushed down beside spoke No. 2 until the desired size scollop is made, and No. 2 beside No. 3, and so on around the edge.

Open Border, No. 2.—For this border the

spokes should be four inches long. Spoke No. 1 is brought forward to the right in front of No. 2, and pushed down beside No. 3. No. 2 is brought forward to the right in front of No. 3, and pushed down beside No. 4. Continue in this way around the edge. See No. 1, Fig. 12.

Twisted Border, No. 1.—This is a very simple close-twisted border, suitable for mats, baskets and covers. Spoke No. 1 is brought forward to the right over Nos. 2 and 3, and behind No. 4, close down to the weaving. No. 2 is brought forward to the right over Nos. 3 and 4, and behind No. 5, and so on around the edge until finished. The ends are then cut off just long enough to allow each end to lie across the next spoke. See No. 4, Fig. 12.

Twisted Border, No. 2.—Spoke No. 1 is brought back to the right of No. 2 and forward over No. 3, then back over No. 4. Spoke No. 2 is brought back of No. 3 and forward over No. 4, and then back of No. 5. Proceed in this way with the rest of the spokes. Then the ends are cut off, as in border No. 1. See No. 3, Fig. 12.

A Heavy Border.—This border is suitable for large baskets. Bend the first spoke back of the second out in front between second and third. Bend the second spoke back of the third out in front between third and fourth. Bend

the third spoke back of the fourth out in front between the fourth and fifth. See Fig. 18. Now take the end of the first spoke that

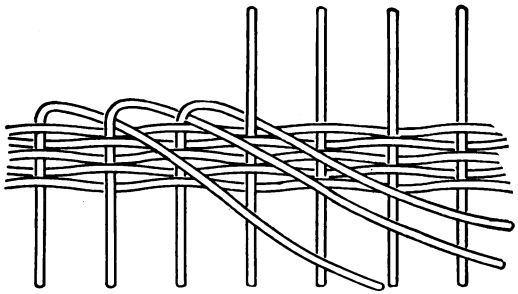


Fig. 18.—Detail of Heavy Border.

has already been bent around the second, bring it forward in front of the third and fourth, back of the fifth out in front between the fifth and sixth, and bend down by the side of this the first upright spoke at the left, which will be the fourth spoke from the first one bent. There will now be two bent spokes between the fifth and sixth. There will also be two between all the succeeding spokes, a short one and a long one. See Fig. 19. The long one is to be used again and the short one left where it is and cut off after the border is finished. Take the end of the second spoke; bring it forward in front of the fourth and fifth and back of the sixth, and out in front between the sixth and the seventh, and then bend down beside it the upright spoke

at the left, which will be the fifth one from the first one bent.

The end of the third spoke should then be brought forward in the same way. The long

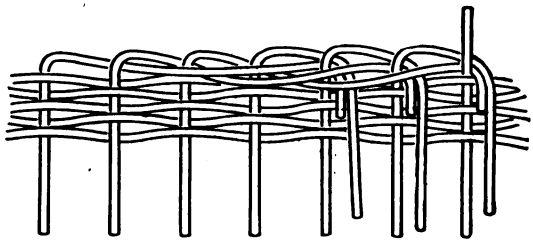


Fig. 19.—Detail of Heavy Border.

end between the spokes will be the one to be brought forward each time in the rest of the border. When the border is finished cut off the short ends of the spokes close up to the border.

VI.

Rattan Baskets.

The old saying that "a poor beginning makes a good ending" does not apply to baskets. The beginning of a basket has much to do with the strength and symmetry of the finished article.

It is quite unnecessary to describe one basket after another in rattan work, for they are so much alike that after one has made a few simple shapes he is able to copy anything that he may see, or to invent new designs for himself.

If possible avoid making an article for the purpose of learning the construction, that will not be fairly satisfactory when completed.

Jardiniére.—For the first attempt one may cover a flower-pot, see No. 1, Fig. 20, as it will be both useful and ornamental. If a pot selected measure 3 inches across the bottom and is 5 inches deep, eight spokes should be cut 21 inches long and one 11 inches long. When

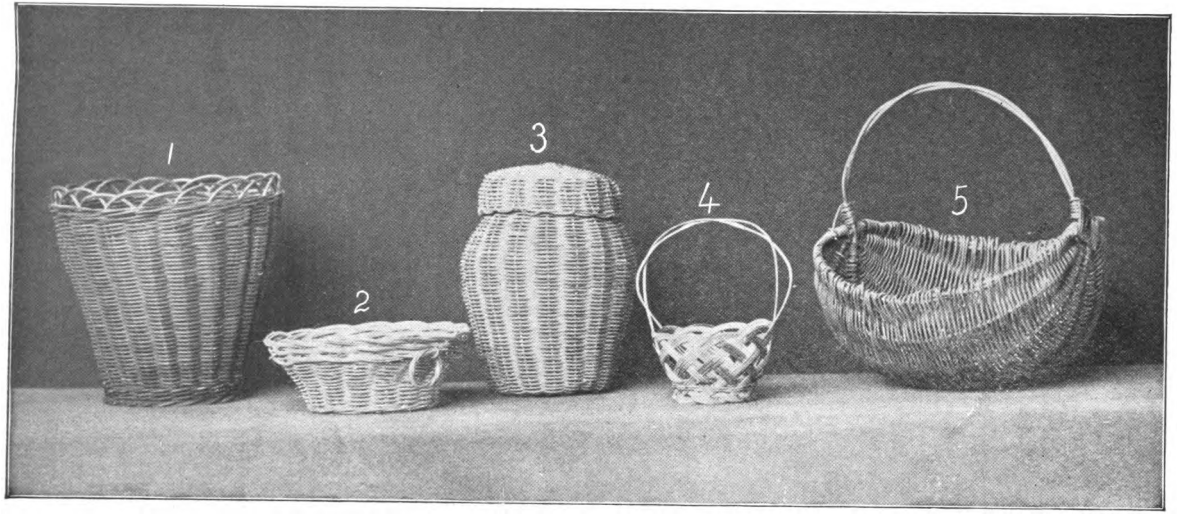


Fig. 20.— Rattan Baskets

bound together there will be seventeens pokes radiating from the center. See Fig. 16. In making large baskets the number of spokes, size and length of rattan must be considered.

Dip the spokes in water and begin the center the same as for a mat. When it is large enough to cover the bottom of the flower-pot, wet spokes again and turn them up on the sides. In beginning to weave the sides care should be taken to bring each row up close to the preceding one, keeping the spokes evenly separated. In joining weavers simply cross the ends behind a spoke. See Fig. 21. When the sides

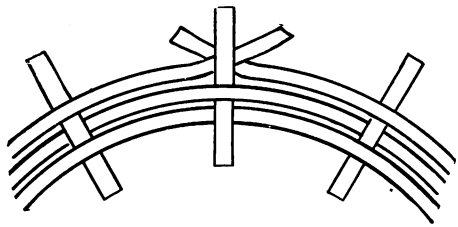


Fig. 21.—Joining Rattan.

are covered, weave three rows of pairing around the top. Finish with a No. 2 border. A small work-basket could be made using the same diameter for the bottom, and making the sides one half as deep—two and one-half inches. This would require eight spokes 16 inches long and one 9 inches long. The sides of the basket should flare more than the flower-

pot. This can easily be done by holding the spokes out as far as desired.

Beginners often find it difficult to make a basket that will stand straight and not tip to one side. No matter how careful one has been to make the bottom flat, it will bulge some in the center when the spokes are turned up for the sides. To avoid this, the center must be

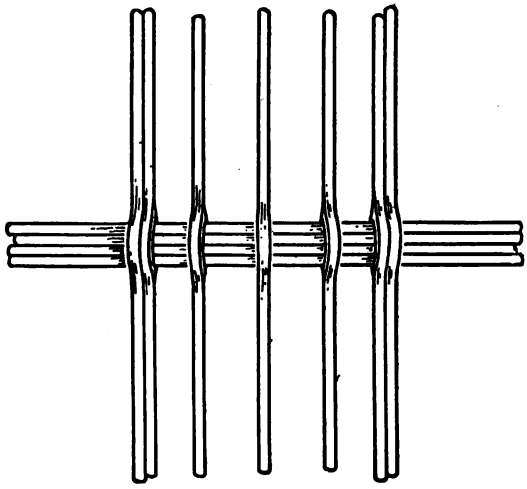


Fig. 22.—Oval Center.

slightly concave, and this can be easily managed. While weaving with the raffia, place the thumb on the center and push it in, bringing the spokes toward the worker while the weaver

is pulled tight enough to hold them there. When the rattan weaver is inserted one can continue to weave a few rows in the same way. Then make the rest of the bottom flat.

In making large baskets it is better to make the bottom like the willow basket, and then add the side spokes by inserting one on either side of the bottom spoke, thus making twice as many side spokes as there are in the bottom.

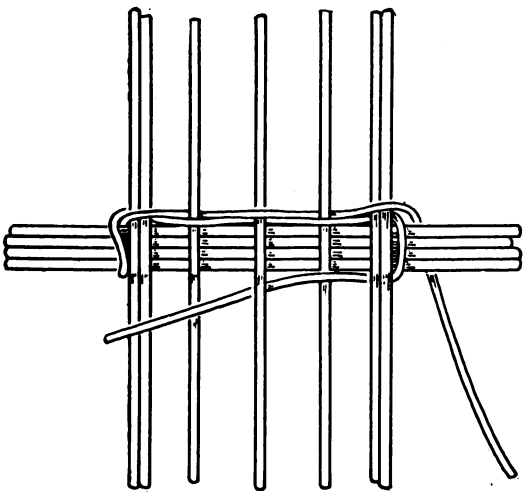


Fig 23.—Showing Two Strands of Rattan.

The bottom of oval baskets should be made in the same way.

The only difference between making a round and an oval basket is in starting the center. It

is well to weave the bottom of an oval basket with two weavers, either using the pairing stitch or allowing one weaver to follow the other, see Fig. 23, thus doing away with the odd spoke. The odd spoke in an oval basket makes the ends uneven.

Arrange the center, as seen in Fig. 22, with short spokes three-fourths of an inch apart on the sides and two together on either end. Spokes can be added in the center, according to the size of the basket desired. One can easily start an oval basket with rattan weaver instead of raffia. The round ones may also be started with rattan. The raffia was suggested, as it is easier for children to make a tight, smooth center with the raffia.

Children in the third grade can readily make simple rattan baskets. They should not, however, use rattan larger than No. 4.

VII.

Handles, Covers, Hinges, and Fastenings.

Handles.—Cut a piece of rattan several sizes larger than the spokes, for a foundation handle. Shave both ends. Push one end down through the border beside a spoke. It should extend two-thirds the way down the basket. Use a large knitting needle to crowd the weavers apart. Push the other end down in the same way on the opposite side of the basket. See Fig. 24.

Insert a pliable weaver just below the border on the outside at the right of one side of the handle, allowing the end to run down beside a spoke on the inside.

Twist the weaver three or four times around the handle, according to its length. On the opposite side the weaver is brought over the border through to the inside of basket, out on the other side of the handle, up over border, and then follow beside the first weaver around the

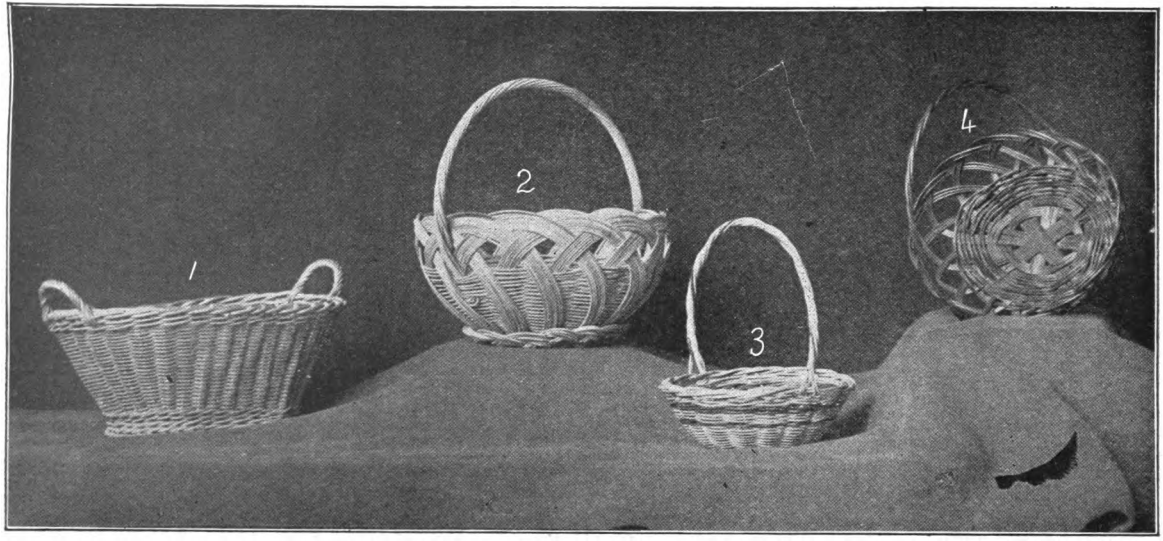


Fig. 24.—Rattan Baskets.

handle. Now bring the weaver over border through to the inside of basket, out on the other side of the handle, then up over border, and follow the second weaver on the handle. Each row must follow closely the preceding one, until the foundation handle is entirely covered, so that another row cannot be crowded in. The last weaver is brought inside the basket and the end is pushed down beside the handle.

Covers.—Plain covers should be begun and made like the bottom. They may be either flat or the spokes can be bent up slightly from the center, thus forming a rounded surface. They should be just large enough to cover the top of the basket, and be finished with a close-twisted border.

Hinges and Fastenings.—Rings made of rattan are very simple and effective for this purpose.

Take a piece of rattan ten or twelve inches long and soak it until pliable. Tie a knot near one end, forming a ring not over three-quarters of an inch in diameter. The other end is then twisted over and under the ring once around. Or it may be twisted several times around if one wishes a heavier ring. These can be fastened to the basket by using a short piece of small, pliable rattan. Pass the rattan around a spoke through the ring, then back again to the inside.

Cross the ends and push them in beside a spoke in opposite directions. Fasten one ring on the back of the cover and attach it to the basket for a hinge, another on the front of the cover, and a third on the front of the basket. This should be smaller, so that it will pass through the one on the cover.

Fig. 25.—Willow Basket.

VIII.

Native Willow Baskets.

This chapter is written to aid those who may be able to utilize the common willow that grows so profusely in many localities. Aside from the convenience of having a supply of material near at hand from which to draw, it gives an added value to a basket if one has gathered and prepared the material from which it is made.

The twigs of the willow may be cut at any time after they have stopped growing, which is some time in August.

Place a bundle of twigs in a common wash boiler with half a pail of water. Allow the water to boil, thus steaming the twigs until the bark, when crushed, can be readily stripped off, leaving a smooth, polished surface. The bark must not be scraped off, as this treatment will make the surface rough and uneven.

In some cases the willows may be used without removing the bark. The Indians frequent-

ly use it in this way for a coil basket, when the coil is covered.

For crushing the bark after steaming, a wooden peeler must be used—an iron one is used for larger willows. This may be made from a branch of green hard wood, three-fourths of an inch in diameter and about six inches in length. Split this through the center for one-half its length.

Fig. 26.

Fig. 27.

Then split again at right angles to the first, thus dividing into four equal parts. Now cut out one-quarter on one side, and another on the opposite side, leaving the two sharp edges of the remaining two-quarters to form the peeler. Fig. 27. Shave the ends of the two quarters from the inside out, so that the twigs will readily slip between them. Take the steamed twig and slip the larger end into the peeler and pull it through, pressing the peeler together with the thumb and finger. When treated in this way, the bark may readily be removed with the fingers.

The best time to cut the willows is in the

spring, just as the sap begins to flow freely. They can then be taken from the tree and run through the peeler without steaming. These are called "sap willows" and will not discolor so much with age as the "steamed willows."

A large quantity may be prepared at one time and allowed to dry. When needed for use they should be dipped in water and rolled in a wet cloth until pliable.

As the willows are in short pieces, the method of weaving is somewhat different from that used in rattan work.

For a basket measuring three and a half or four inches across the bottom, select one hundred or more willow twigs, the large ends of which correspond to Nos. 2, 3, and 4 rattan. More must be prepared than are really needed, as there is always a waste. (Fig. 25).

Cut off about three-fourths of an inch from the butt end of each twig; if the end is left on the work will be clumsy. Before beginning work be sure that the willows are pliable.

Select six of the largest twigs and cut a piece four and a half inches from the large end of each. Make a small slit in the center of three of these pieces and push the other three through them down to the center. These will form the bottom spokes. It is not necessary in this basket to add the odd spoke.

Take two of the smallest twigs to bind around the center (Fig. 28), using the twining stitch. Weave around the four groups of spokes two

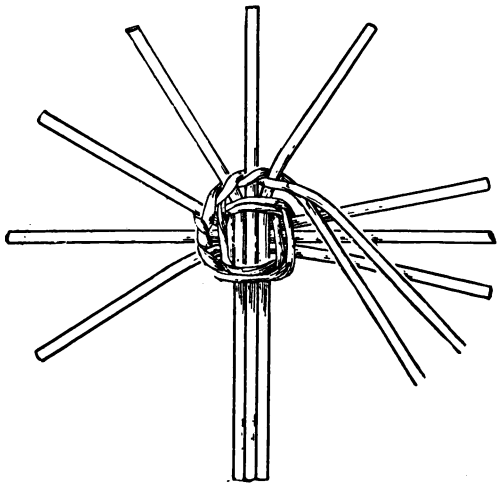


Fig. 28.

or three times, crossing in the corners; then go on with the same weave and separate the spokes.

When a new weaver is needed insert the large end of another twig behind the spoke where the old one ends, and continue to weave in this way until the bottom is three or four inches in diameter. Then cut the ends of the spokes off close to the last row of weaving.

Take twenty-four of the largest twigs. Shave each large end and insert one between the weavers on each side of the twelve bottom

spokes, allowing the ends to extend well in toward the center. Bend these up to form the side spokes, and tie the upper ends together to

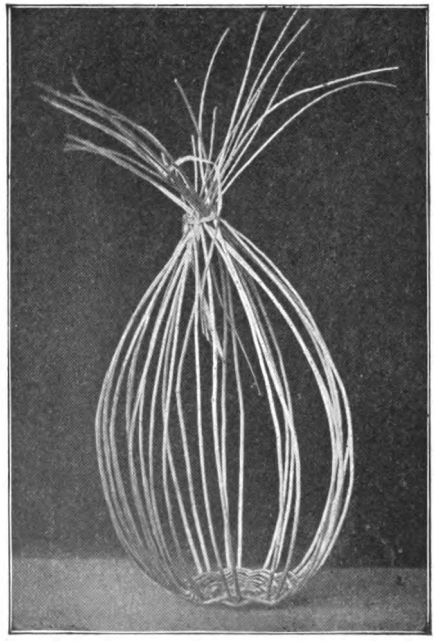


Fig. 29.—Spokes tied together.

hold them in place. Allow them to remain tied until about one-half inch of the side has been woven.

Now take twenty-four more twigs. Shave the ends and insert one on the outside of each side spoke, making twenty-four side weavers.

Begin at any place to weave by passing one of the weavers to the right over three spokes and behind the fourth and out in front between the fourth and fifth spokes. Take the next spoke to the left of the first one used and weave in the same way over three to the right, behind the fourth and out to the front between the fourth and fifth. Continue to do this until the starting place is reached. This will make a triple twist around the bottom.

There will now be one weaver between all the spokes. At this point the real weaving of the side begins. Take any weaver and pass it to the right over one spoke and under the next one. Where this weaver comes out between the spokes, there will now be two weavers, but one will see that there is a weaver behind the spoke to the left that will go in between them when woven. Take the next weaver to the left and pass it to the right, over one spoke and under the next one. Pass the next weaver to the right over one spoke and under the next one; over another and under another. Take the fourth weaver and pass it over one and under one; over another and under another. There will now be five spokes that have no weavers between them, thus leaving four spaces without weavers. This arrangement helps one to weave more rapidly. The rest of the weavers

to the left will be woven over one and under one, over another and under another until the starting point is reached. Then there will be a weaver extending out between each spoke.

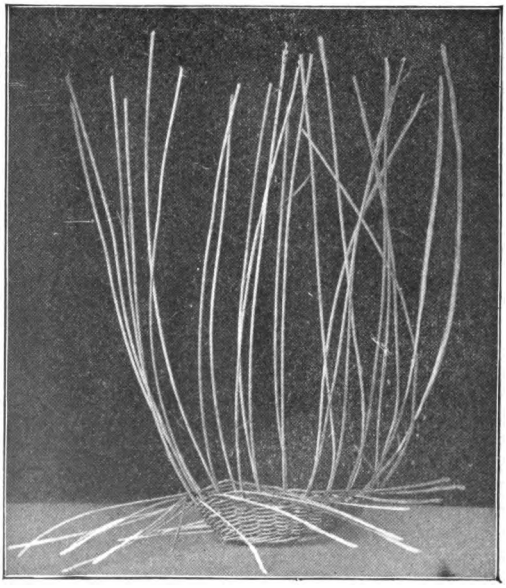


Fig. 30.—Weaving begun.

Proceed as in the beginning after the triple twist was woven around the bottom, and continue to weave as before.

When the full length of the weavers has been used, insert a new set, one behind each spoke, and go on with the weaving as in the beginning. Join all the weavers at the same time.

This should be done when there is a weaver between each spoke.

When the top has been reached, take three of the largest twigs and make a triple twist around the basket. Four weavers can be worked in the same way. Finish by making the heavy border—the last one given in the chapter on borders—with the spokes.

IX.

Articles made of Raffia.

There is scarcely any other material that lends itself to so many uses, both artistic and useful, as raffia. It can be used in place of floss to embroider screens, pillows and portieres. When done in a Japanese pattern, the result is specially pleasing.

There are so many ways in which braided raffia can be used that a few simple directions may help to avoid a great waste of material and do away with the rough unsightly objects that so often pass for industrial work.

I have no sympathy with the teacher who, when asked if she would present a crude, rough piece of work, which she held in her hand, as a working model, replied: "Oh, it will do; it will give some idea of the work." It is this "It will do" idea that is responsible for much of the inefficiency of the present time.

Braiding.—Four strands are the least number with which a satisfactory braid can be made.

There is no way of concealing the ends when three strands are used, and it is more difficult to make an even braid.

In beginning a four-strand braid, instead of tying the four strands together at one end, take

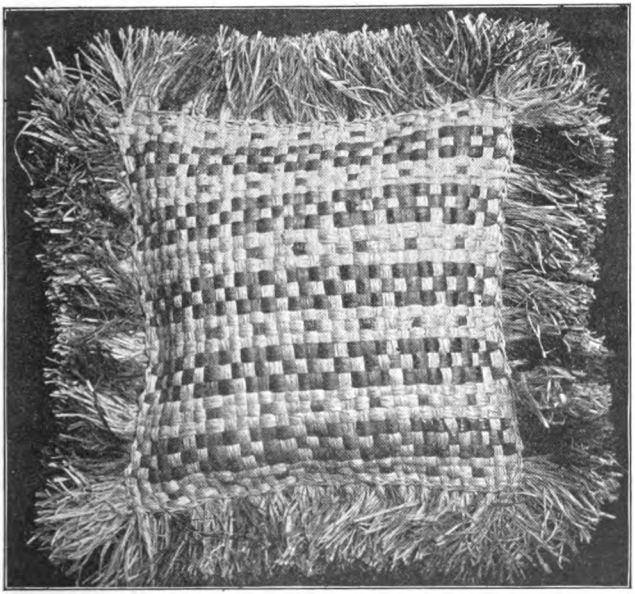


Fig. 31.—Pillow made from Raffia.

two strands of raffia, one in each hand, cross the one in the right hand over the one in the left near the center, but so that the four ends will be uneven. This will obviate the necessity of splicing all the strands in the same place. Bring the lower left-hand strand in front and

cross over the lower right-hand strand. Bring the one that is now the upper left-hand strand

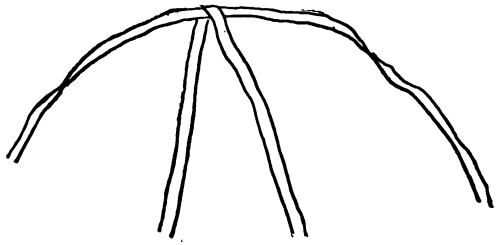


Fig. 32.

down under the lower left-hand strand, and hold these in place with the thumb and forefinger of the left hand. Now bring the upper right-hand strand down over the lower right-hand strand and cross under the lower left-hand strand.

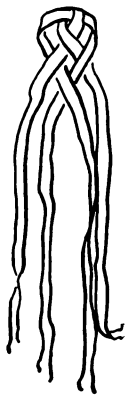


Fig. 33.

If the following short formula is kept in mind, it will be an easy thing to make the braid even and smooth: "*Under with the left, over with the right, and cross in the center.*" Keep the thumb and forefinger of each hand up close to the braid. It should be kept of uniform width by inserting new strands when needed. Bring the strand that is to be spliced to the lower right-hand place. Insert the new strand beside it, allowing the large end to extend an inch up under

the upper left-hand strand. See Fig. 34. If the new strand makes the braid too wide the end of the old strand may be left out on the wrong side. Cut the ends off close up to the braid.

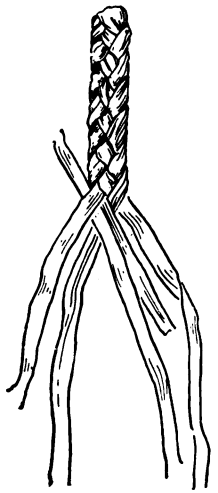


Fig. 34.—Joining Strand.

In sewing the braid together use a small piece of a strand of raffia, sewing over and over on the wrong side. Draw the thread tight, so that the stitches will show as little as possible on the right side. Any number of strands may be braided in the same way.

A six-strand braid is very desirable for bags,

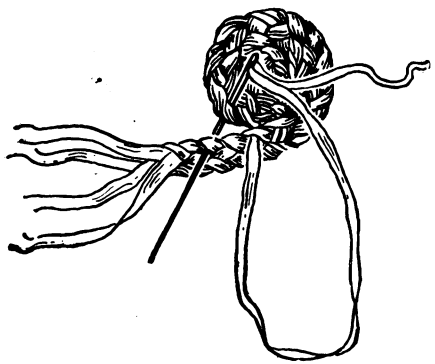


Fig. 35.—Sewing Mat.

boxes, and etc. A formula for the six strand braid is as follows: "*Under and over with the*

left, over and under with the right and cross in the center."

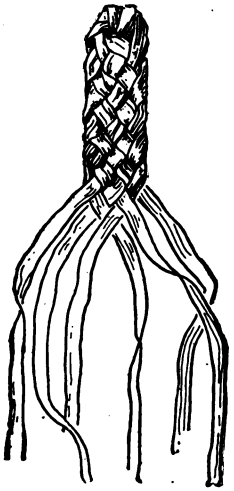


Fig. 36.—Six Strands.

Porch pillows, mats and splashers are very

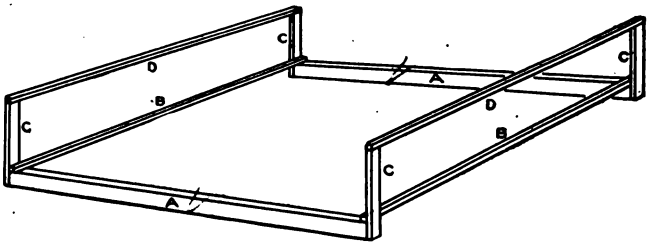


Fig. 37.—Loom used for making Pillows.

easy to make, and are both decorative and useful. It requires a strong loom for this work.

Any boy or girl can make one. The dimension of the lumber used for this loom is as follows:

A.—2x4—23 inches long. B.—1x2—25 inches long. C.—1x2—10 inches long. D.—1x1—25 inches long. The needle—E—is of hard wood 1x1-4 and 26 inches long, made tapering with an oblong eye in the large end.

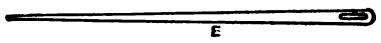


Fig. 38.—Needle belonging to Loom.

For one strand of the pillow, use sixteen strands of raffia, medium size. Tie the large end of the strand around the small upper bar on one side of the loom. Straighten out the raffia and tie on the opposite side by carrying the whole strand over the bar. Then divide the strand and bring one-half up on one side of the whole strand and the other half on the other side of it and tie. The large end of the next strand should be tied in on the opposite side from the first strand, but close to it, so as to keep the weaving even. Always tie in the large end of a strand first. It will take thirty-three strands for a pillow eighteen inches square.

Any color may be used in different patterns, either in stripes or checks; or one color may be used for the center, with a different colored border around the edge.

When the warp has all been tied in, tie two pieces of raffia together a finger's length from the large ends. The short ends will run out into the fringe. Then with these strands of

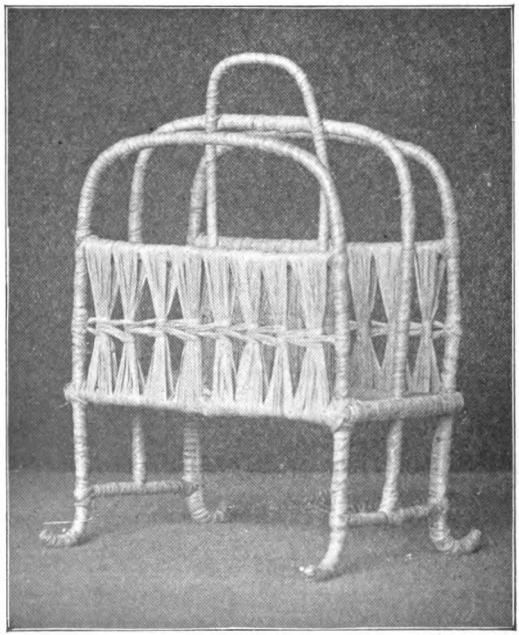


Fig. 39.—Card Holder.

raffia tie the warp strands at one end firmly together an inch and a half from the bar, using the chain stitch. This makes a firm, straight base, against which the first strand of the woof can be pushed. Use the same sized strands for

the woof that was used for the warp. Thread the large end of the strands into the needle and weave them first in on one side and then in on the opposite side, thus alternating the large ends with the small ones, the same as in the warp strands.

When done the pillow should measure the same on all sides. If it is impossible to crowd in the same number of strands that were used in the warp, one or two may be left out.

Finish all around with the same chain stitch that was used across the beginning end. Untie the ends and cut them off, leaving four inches for a fringe. It is desirable to make the second side of the pillow in a different pattern.

When both sides are finished they may be sewed together and filled with the waste ends of the fringe, together with a handful of excelsior.

Fig. 40 shows a number of articles that were made from the split strands of raffia. We shall not attempt to describe the work here, but they will serve to show the possibilities of the material.

X.

General Directions.

Preparation of Raffia.—Raffia is imported with the strands tied together at the large ends in small bunches. It is well to keep it in this way, as it is hard to manage when untied. It can be used to good advantage just as it comes from the market, but some prefer to cleanse it before using.

In order to do this, enough boiling water should be poured upon a bunch of raffia to cover it. After it has soaked an hour or more, it should be thoroughly rinsed up and down in the water, and then hung up by the large ends, to dry slowly.

When raffia is used for sewing, one should thread the end of the raffia that will the most readily go into the eye of the needle, but after threading, *do not fail* to move the needle towards the larger end and join the smaller end to the work. The larger end is the one that is cut from the stock and is usually darker and somewhat hardened.

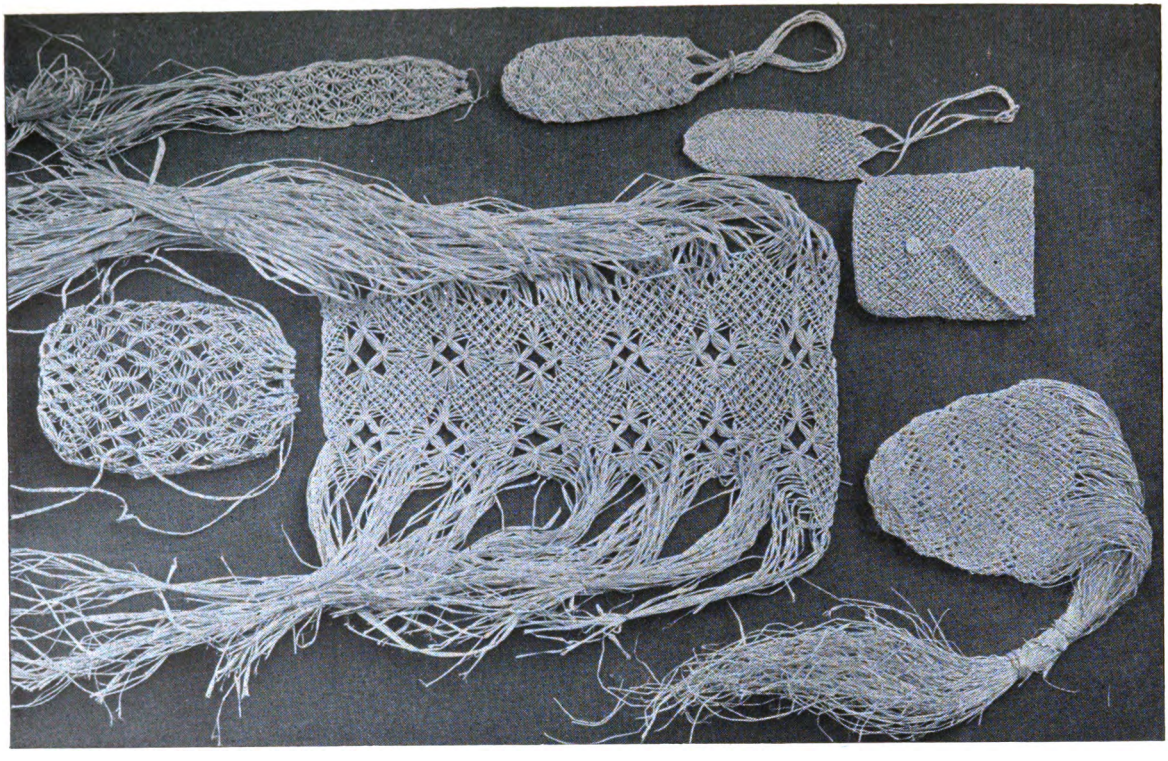


Fig. 40.—Lace Work of Raffia.

In the directions for making the different baskets, the strand of raffia that is threaded into the needle will be called "the thread," to distinguish it from other strands.

As the work progresses, frequently move the needle along on the raffia, for the needle wears it quickly. If the raffia becomes too large as it is used up toward the needle, a piece can be split out at any time. Keeping the raffia of a uniform size throughout the work has much to do with its beauty.

Using the raffia damp will tend to strengthen it and make the work smooth. Keep the raffia flat by twirling the needle frequently between the thumb and forefinger to take out the twist. Before beginning to make a basket, read the directions through carefully.

The top of a coiled basket should be finished directly over the place where the first row of the bottom is turned up to form the sides, thus making an equal number of rows all around the basket. If this is not done the sides will be uneven.

Beginners are often perplexed in regard to shaping a basket, the form of the decoration, and the introduction of colors. With very little practice one soon becomes skillful in this work, and feels quite equal to trying his hand at any basket that he may see. It is better to keep to

the simple forms and not try the unusual, which may degenerate into what George Wharton James calls "vicious shapes."

The decoration must be planned before one begins to work on the side of the basket. There are several ways in which this can be done.

The bottom may be started and made five or six inches in diameter. By counting the number of rows on the bottom that make an inch, one can then estimate the number of rows that will make the sides the desired height. If one wishes to decorate the basket with bands, either around the center or near the top, he may decide how many rows to work with the uncolored raffia and how many to work in colors.

If the decoration desired begins at the bottom row, see Fig. 64, one must divide the circumference of the bottom into four equal parts (if one desires this pattern), and begin to work on any row of the pattern.

One need not count the rows, but make a pattern by measure. Thus—bottom, six inches in diameter; height, two and a half inches. The side may be of any shape; either a continued flare, or it may flare out for nearly two-thirds its height, and then curve in toward the center. The side may be made with the uncolored raffia for three-fourths of an inch, then some pattern worked in with colors that will come to within

half an inch from the top; finish in the same way as the bottom. There are a great many artistic patterns that can be copied. Of course, a more satisfactory way would be for one to design his own decoration.

A *color* can be introduced in the same way in which a new thread is added, by allowing the ends of the old and the new thread to run along on the uncovered coil. As the work proceeds these ends will be covered by the stitches. It is not necessary to join a new thread each time some color may be needed. When one is through using a color, it may run along with the coil until it is needed again. In this way threads may be exchanged by dropping the one just used into the coil, and selecting another from the coil to take its place.

One should always work on the outside of a coiled basket from right to left.

The first row of the side of a basket should be turned away from the worker, and the first row of the side of a plaque toward the worker.

XI.

Knot or Lace Stitch.

In naming the different stitches one is quite confused, for authorities differ so much on this subject.

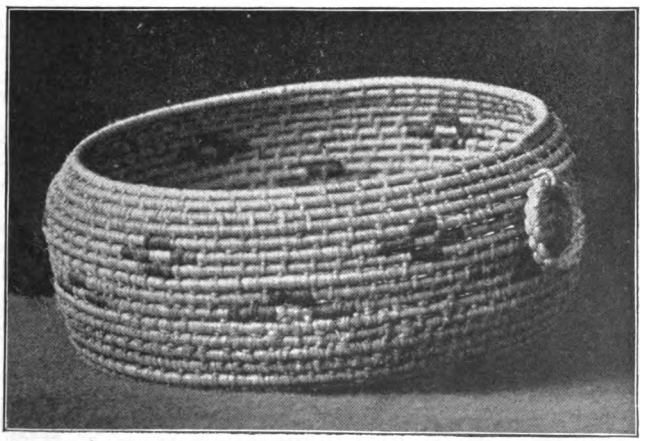


Fig. 41.—Knot Stitch Basket.

The knot or lace-stitch is used for the first illustration of a coil basket, not because it is the most simple one, but because it shows less if the

threads and stitches are uneven. It can be used on the rattan or the soft roll, and looks equally well in any size or shape. If well made, there are few stitches that make a more beautiful basket.

Dip a length of Nos. 3 or 4 rattan into water —this will prevent its splitting or breaking while winding.

Wind it into a small coil—four or five inches in diameter—and fasten together by tying twice, leaving about eighteen inches uncoiled. Place five or six inches of the uncoiled end back in the water and let it remain until pliable. The rattan should not be wet again. If the rattan is used while wet it will shrink in drying and the raffia will be loose, thus making very unsatisfactory work. Shave the end of the rattan on the under side of the coil two and a half inches from the end, slanting gradually to a flat point, as in Fig. 42. Thread about one-half strand of raffia—split lengthwise—into a

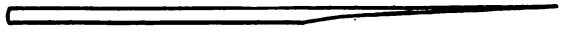


Fig. 42.

No. 18 needle, with the needle nearest the large end.

Hold the end of the rattan in the left hand with the forefinger upon the small end of the thread about an inch from the end of the rattan.

Carry the thread down to the point, with one or two turns around the rattan, as shown in Fig. 43, and wind the rattan firmly back from

Fig. 43.—Carrying the Thread down to the Point.

the point (Fig. 44), about five-eighths of an inch. Bend the end over on the shaved side

Fig. 44.—Winding the Raffia back from the Point.

three-eighths of an inch. (Fig. 45.) Then bend again. The winding should come to the

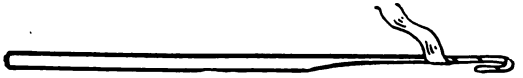


Fig. 45.

point indicated by a cross. Bring the thread around on the under side and pierce the center with the needle from front to back. See Fig. 46. This will not be a difficult thing to do if the

rattan has been thoroughly soaked and shaved thin. This makes a firm center for any basket, and is now ready for any stitch.

If the knot stitch is to be used the thread should be brought under the center to the front,

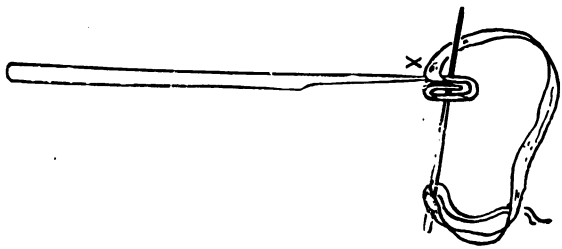


Fig. 46.

over the top, up through the right-side end, and down through the left side end, see Fig. 47, making a cross or knot in the center.

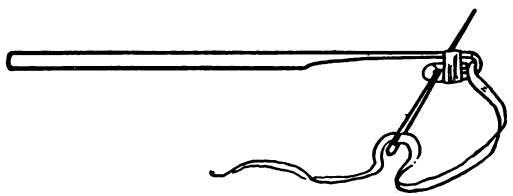


Fig. 47.

Hold the rattan firmly in the left hand, bring the thread from underneath the coil up to the left toward the worker, wind the uncovered rattan twice—winding from the worker—carry the thread over the forefinger and under the

second finger of the left hand to hold it, so that the winding will not slip on the rattan. The thread should be kept taut all the time. Grasp the coil with the right hand, and with the left-hand thumb and finger bring the rattan that has been wound close to the center. Hold this in place with the left hand and insert the needle underneath at the left end of the center.

Draw the thread through and carry it over the covered rattan and around it, up to the left. This is the stitch that binds the free rattan to the preceding row. Hold the thread under the thumb of the left hand against the center until

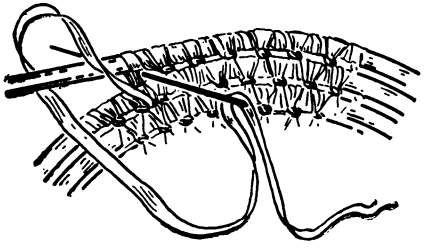


Fig. 48.—Knot Stitch.

the thread is carried across the binding stitch just made, and down at the right of it, through to the back. Then bring the thread up under the coil to the left, wind twice and sew into the same place. Wind again and carry around to the right end of the center and sew in the same way. After having worked one row around the

center, it can be forced into a circle between the thumb and finger.

Wind the rattan two or three times, as needed, between the stitches, which should be about a quarter of an inch apart, taking care always to keep the thread flat. This can easily be done, if it is untwisted every few stitches by whirling the needle around between the thumb and finger, in an opposite direction.

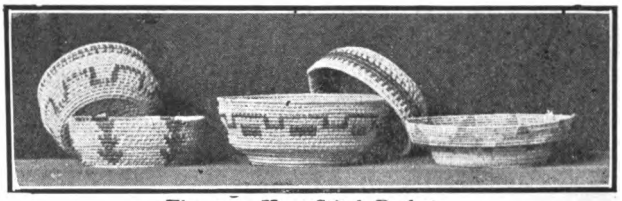


Fig. 49.—Knot Stitch Baskets.

Splicing Thread.—In starting a new thread do not begin at the very point, but up several inches from the end, where it begins to grow larger, and is more nearly like the preceding thread.

Allow the ends of the old and new thread to run out to the left beside the uncovered rattan, and wind them in with it as the work proceeds. After working two or three stitches, the ends may be cut off. The joining should not show.

Splicing the Rattan.—Wet and shave both ends of the rattan to a flat point, beginning an inch and a half from the end. Shave one end

on the upper, and the other end on the lower side of the curve. Place the shaved surfaces to-

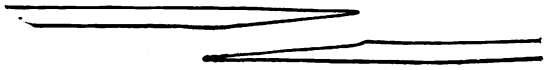


Fig. 50.—Splicing Rattan.

gether in such a way that the uniform size of the rattan may be kept. Wind a few times with a small piece of raffia or thread, and sew through two or three times so that the ends will not draw apart.

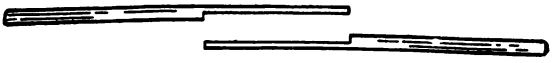


Fig. 51.—Splicing Rattan.

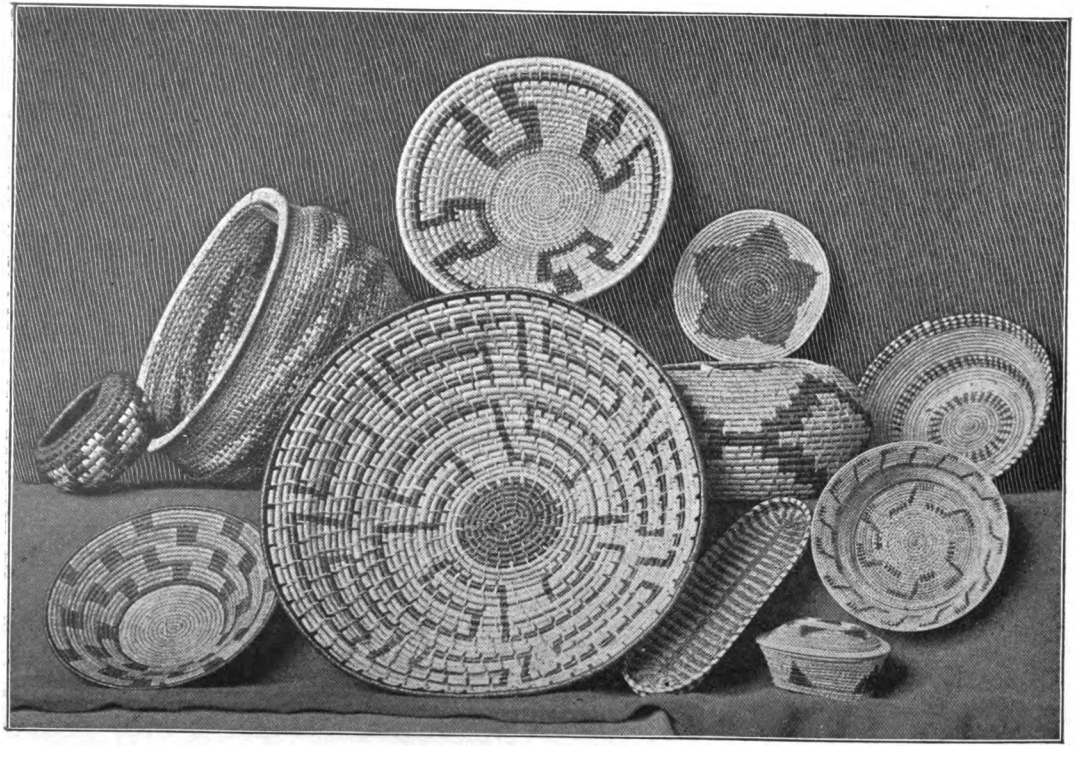


Fig. 52.—Baskets of Raffia and Rattan.
(Hard and Soft Coil.)

XII.

Navaho Weave or Figure Eight Stitch.

Take two lengths of number 4 rattan. Wet and shave one end of each piece. Place the two shaved ends together, one above the other;

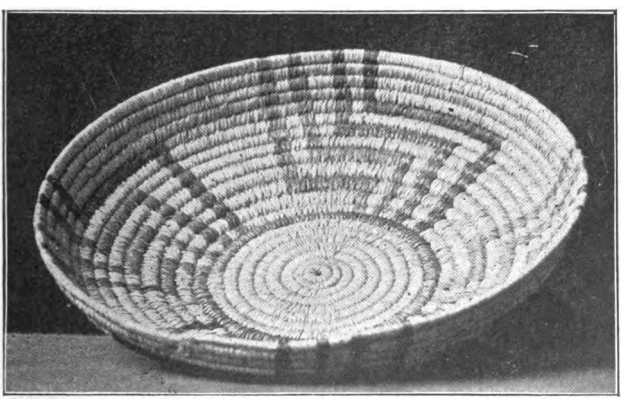


Fig. 53.—Navaho Weave.

(Fig. 54) then wind and sew, as directed in Fig. 46; this leaves the thread at back of the center. Bring the thread under the center up to the left, wind the coil once, pass the needle down over

the preceeding coil and out at the back. Fig 55. Proceed with the next stitch in the same way.

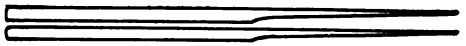


Fig. 54.

As the work progresses the stitches have a tendency to draw to the right, and do not form a straight line out from the center. To remedy this, care must be taken to spread the thread on the outside coil. The coil may also be wound

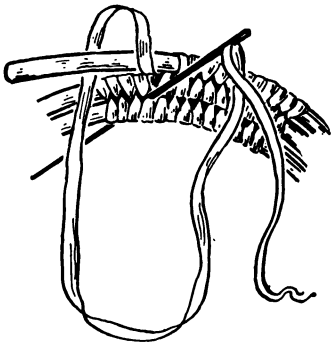


Fig. 55.—Figure Eight Stitch.

once between the stitches when needed. The stitches should always be the same distance apart.

In the illustration, Fig. 53, the flat bottom includes the first row of color. The next row turns slightly to form the sides. Keep an even, shallow flare for eight rows, Fig. 56; then work

up nearly straight for five rows. Shave the ends and finish directly over the place where the

Fig. 56.—Cross Section of Plaque.

rattan began to turn up for the side of the plaque.

In joining a new thread allow the ends of the old and new thread to run along the rattan at the left, where they will be covered by the stitches.

To introduce color, join in the same way as a new thread. In working out a pattern, do not cut the threads in changing from one color to another, but carry the unused threads along with the rattan until needed.

All the different lines may be worked in one color or each in a different color.

In using this stitch one will observe that in order to work in one row of color it is necessary to cover two rows; but when the next row is worked in with the natural color, one of these will be covered, leaving only one colored row, as planned.

XIII.

Flat Rattan.

The flat rattan is used to advantage either in a square, oblong, or a round shape.

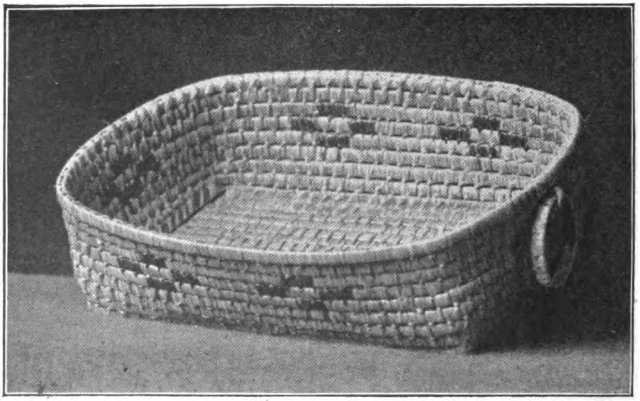


Fig. 57.

Oblong Basket.—It is well to make the bottom of this basket first. The size of the one in the illustration is seven by four and a quarter inches.

Cut seventeen strips seven and a half inches

long, using the quarter-inch-wide rattan. Shave both ends to a thin, flat point, beginning one-half inch from the end. Cover one strip by winding with a thread of raffia. Sew a second strip to this, using the knot stitch. Sew a third to the second and so on until the seventeen have been used. Leave one-quarter of an inch of the rattan on each end of every strip uncovered. Care should be taken to have all of the strips of the same length, so that when finished the bottom will be perfectly square; if not, the basket will be uneven. Use for sewing about one-half strand of medium-sized raffia.

When the bottom is finished, soak the uncovered ends until pliable. Cut and wet two strips

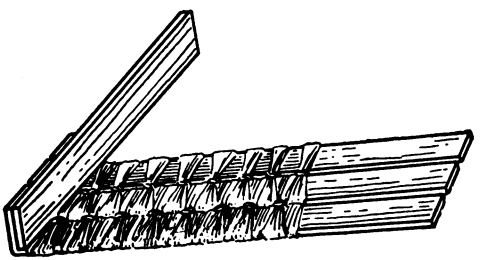


Fig. 58.—Showing the end turned without the Stitches.

of rattan as long as the width of the bottom. Place these strips over the uncovered ends of the bottom, and fasten securely by sewing through each one to make the work firm. The stitches are omitted in the illustration. Bend

the end strips up so that they will come on the inside of the basket. Fig. 58.

For the first row of the side cut a piece of rattan long enough to go around the edge of the bottom, allowing one-half inch for lapping. Shave both ends on one side, so that the uniform size of the rattan may be kept. Hold this strip up to form the first row of the side and sew around, using the same stitch as on the bottom. At the ends the side strip will pass on the outside of the turned ends. The stitches are carried over both the outside row and the inside strip, thus completely concealing the ends.

Continue to add rows until the basket is of the desired depth. If a straight side is desired use all of the strips of the same length. The sides may be made to flare by making each strip a trifle longer than the preceding one. The top of the basket can be made firmer by using two strips placed together in the last row instead of one, as in the preceding rows.

Round Basket.—A very desirable round shape, with a cover, is made from this material. It is especially convenient for collars and cuffs. Use the same width as for the oblong basket.

Cut ten strips eighteen inches long for the sides. This will make a basket five and a half

inches in diameter. If a larger basket is desired, cut the side strips longer.

Measure all the strips by the first one cut to insure a uniform length. The ends of each strip must now be sewed together, forming a ring. Shave both ends, lap one inch, and wind

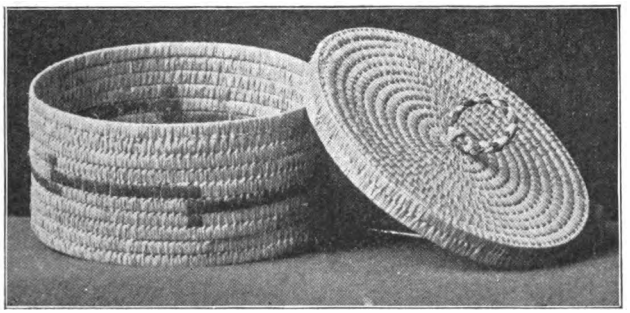


Fig. 59.—Round Basket.

lightly with a small flat thread of raffia. Then sew a few times back and forth through the rattan to hold it firmly in place. These rings, when sewed together, will form the sides.

Hold two rings in the left hand one above the other. Tie the small end of the thread on to the lower ring, using about one-half strand of raffia for this purpose. Throw a loop of the thread up inside of the two rings, allowing it to come up a half an inch above the top one, Fig. 60. Bring the needle from the inside out between

the rings and pass it through the loop from the outside.

Draw this loop down over the top ring to the one below, keeping the thread taut. Pass the

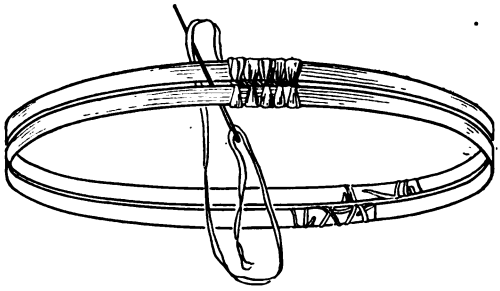


Fig. 60.

thread down over the lower ring up on the inside and through between the rings to the right of the loop, bringing the thread to the outside. Then cross over the loop and pass the needle

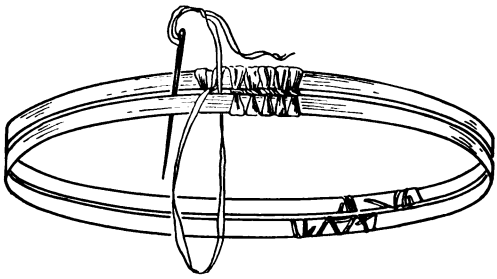


Fig. 61.

down between the rings at the left of the loop, thus making the knot. Fig. 61. Throw up an-

other loop at the left of the first and proceed as before. The loop is for the purpose of covering the top ring. The lower ring will be only half covered. The spaces left between the stitches will be filled in when the next ring is added. After the two rings have been sewed together, place the third below the second ring, holding the three in the left hand. Join the thread to the second ring and bring it down inside the third ring, up over the third and second on the outside. Fig. 62. Pass the needle down

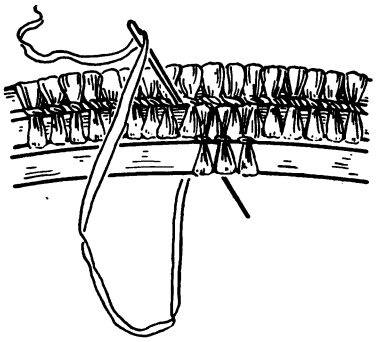


Fig. 62.

between the first and second ring between two stitches, up to the right of thread, and down at the left (Fig. 63), thus covering the second ring and leaving spaces between the stitches on the third row to be covered when next ring is added.

When the ten rings have been sewed together, spaces between the stitches will be left

on the last row. These will be covered when the bottom is sewed in. Care must be taken to

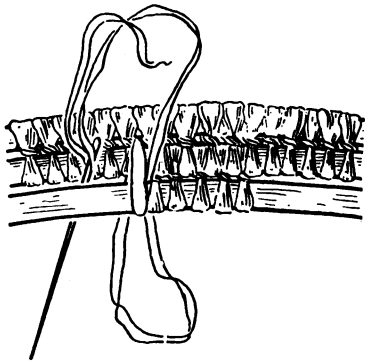


Fig. 63.

hold the rings even, so that they will not bulge in places.

Cover.—Cut two strips eighteen and a quarter inches long for the sides of the cover. Fasten together the same as the side rings. Leave the spliced ends to be covered last, so that the fit of the cover may be changed if necessary. The bottom of the basket and the top of the cover will have the same appearance as the sides if two coils of No. 3 round rattan are worked together—Fig. 54—thus forming a curving, flat surface. Wind the rattan once between the stitches.

Waste Basket.—A waste basket may be made in the same way as the small round bas-

ket, using one-half inch flat rattan. It may be made to flare by making each ring a trifle larger than the preceding one, or be made to bulge in the center by making each ring a trifle larger than the preceding one for half the height of the basket. Then each ring should be made smaller than the preceding one until the top ring is reached.

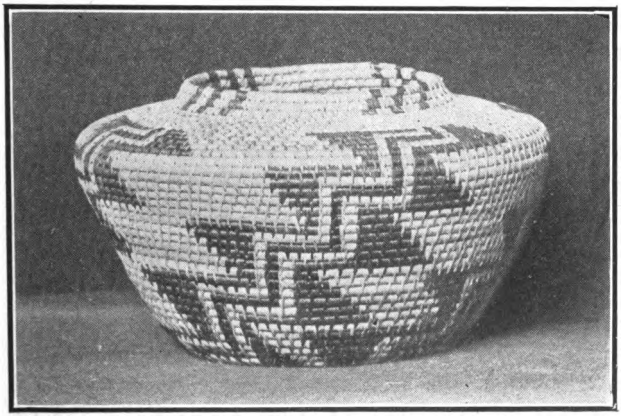


Fig. 64.—Bottle-neck Basket.
(Soft Coil of Raffia.)

XIV.

Soft Coil.

The strands of raffia vary so much in size that it would be impossible to indicate the size of a coil by the number of strands used.

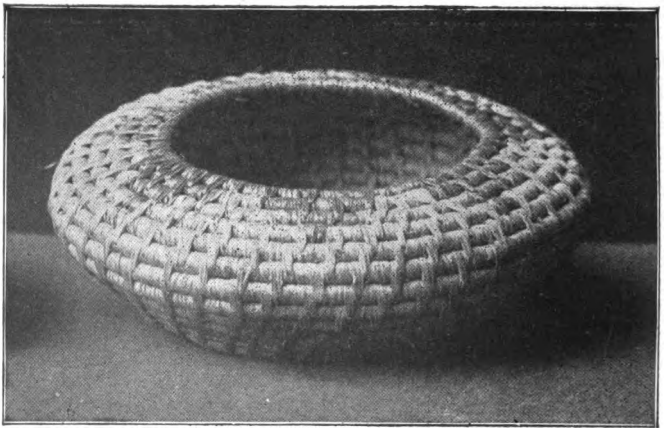


Fig. 65.

Take as many strands of raffia as will make, when twisted, a coil the size of No. 6 rattan, which is about one-fourth of an inch in diameter. Cut the large ends slanting and place together so that they will be uneven and will form a blunt point. Fig. 66.

Thread needle (No. 18) with about one-half strand of raffia and draw needle toward the large end.

Hold the strands of raffia in the left hand one inch from point; place the small end of the

Fig. 66.

thread under the thumb of the left hand. Carry the thread down to the point, winding once or twice to hold the raffia in place; then wind firmly back from the point three-eighths of an inch, turn and sew, as in Fig. 46.

Use the Figure Eight stitch for the bottom, which should be four inches in diameter.

Strands must be added to the coil when needed, to keep it of a uniform size throughout the basket. When new strands are added insert the large ends between the other strands close to the winding.

As the size of the thread forms a large part of the decoration in this basket, the strand of raffia that is used for sewing the sides must not be split, but good-sized raffia must be selected for this purpose. Use a No. 17 needle.

On the first row of the side, instead of using

the Figure Eight stitch, as on the bottom, insert the needle from behind, through the center of the preceding coil, bind over the free coil, as in Fig. 48, without the knot; then wind the coil —winding from you—to the next stitch. The stitches should be about one-quarter of an inch apart. Work around the basket once in this way, being careful to have the stitches the same distance apart. As the basket increases in size, the stitches will be farther apart; as it decreases in size toward the top, they will be nearer to-

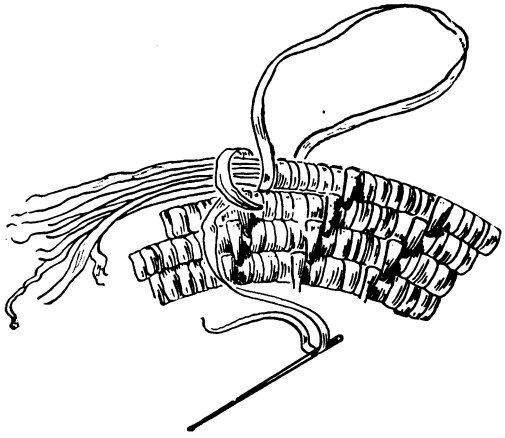


Fig. 67.—Showing Stitch.

gether. No new stitches will be added as in most other baskets.

When starting the second row on the side, bring the needle up through the center of the preceding coil close to the right of each stitch, thus forming a spiral effect. Make the sides two inches deep—measuring straight up from the center—and seven inches in diameter. Then turn the direction of the coil toward the center, beginning just over the place where it began to turn up to form the side. Leave an opening for the top four inches in diameter. Cut the coil off where it is to end, which should be just over the place where it began to turn in toward the center. Then cut some of the strands out, slanting them so as to make the end taper gradually for about two inches.

Another way of using this same stitch is to take a smaller thread and place the stitches an

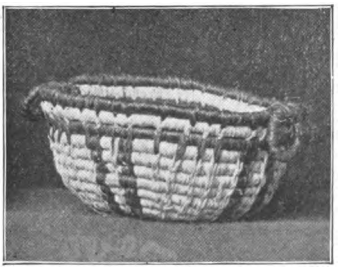


Fig. 68.

even distance apart—one-quarter of an inch—winding the coil between them.

This is one of the most satisfactory stitches for a soft coil.

The same stitch can be varied by strapping the coils together at regular intervals, and each time round taking the stitch in the same place, by passing the needle up through the stitches, giving them the appearance of a chain stitch. Fig. 68. Use a half strand of raffia for the thread. As the basket increases in size, put in new stitches by making a stitch half way between all the other stitches, and proceed as before.

Fig. 69.—Rattan and Raffia Baskets.

XV.

Button-hole Stitches.

It is better to work this on a hard coil. No. 2 or 3 rattan is a desirable size.

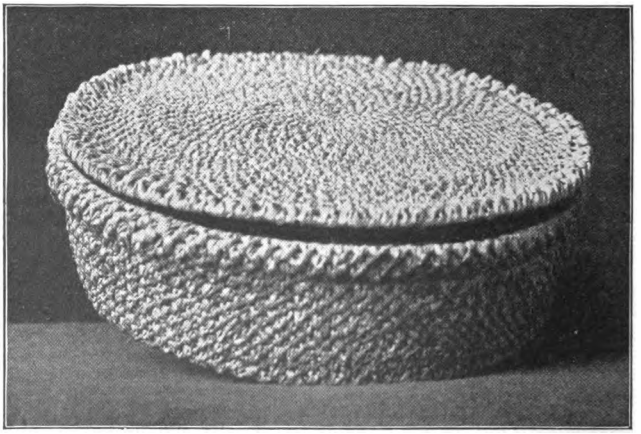


Fig. 70.—Showing Button-hole Stitch.

Begin the center as shown in Fig. 46. Loop the thread up behind the coil, Fig. 60, and pass the needle through this loop from the front side next to the worker; draw the thread through

the loop and bring it over in front down firmly on the coil, Fig. 71, leaving the loop nearly on

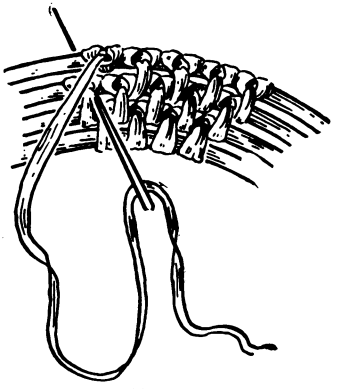


Fig. 71.

the top of the coil, so that the loop will hold the thread up, thus giving the stitch the pointed

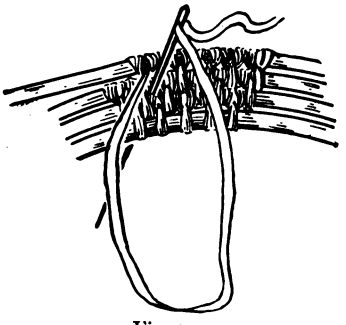


Fig. 72.

effect. Then pass the needle down through the center, from front to back, and loop as before.

When once around the center, pass the needle down between each stitch on the preceding coil, keeping the line of stitches straight out from the center, by putting two stitches in the same place as often as needed.

Quite a different looking stitch can be made with less care by drawing the loop each time down to the lower edge of the coil. Fasten the thread by winding it in with the coil. Fig. 72.

XVI.

Strap Stitch.

This is sometimes called the "Lazy Squaw Stitch." It is the most simple stitch, but its

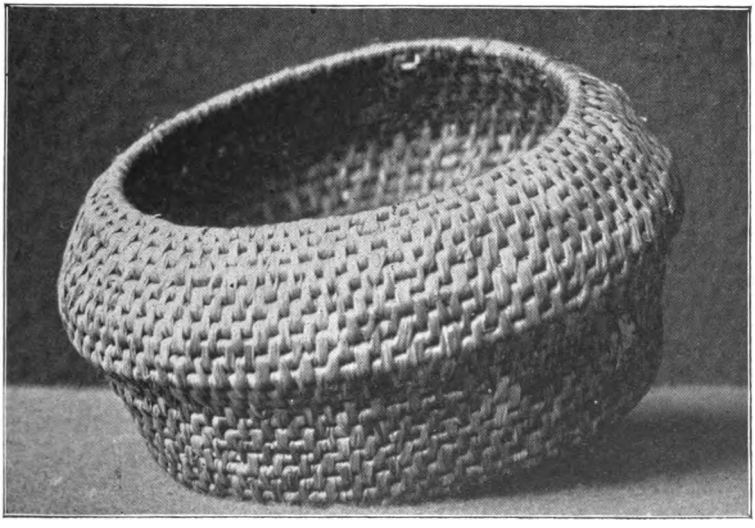


Fig. 73.

beauty depends, more than any other, upon the uniform size of the thread used.

It is better to make this stitch over a rattan, as the coil is wound but once between the stitches, thus making it difficult to keep a soft coil in place.

Begin the center as in Fig. 46. The stitch is like the knot-stitch, with the knot omitted.

As the basket increases in size take two

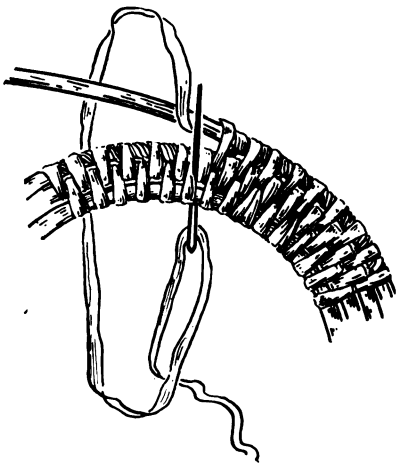


Fig. 74.

stitches in the same place, so as to keep them parallel and one directly above the other.

XVII.

Whip Stitch.

This is a very simple stitch and can be used on many different materials—rattan, corn

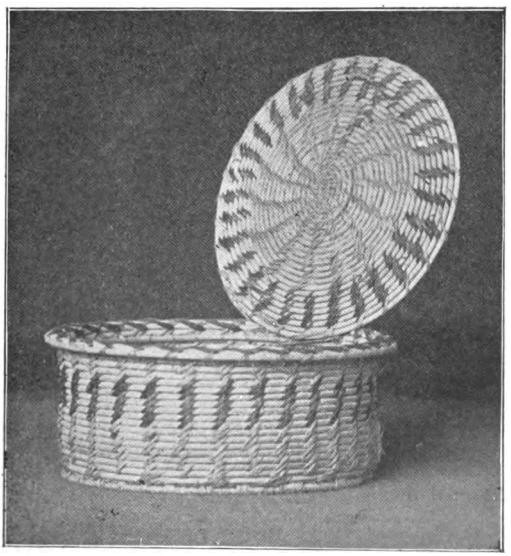


Fig. 75.

husk, rushes, cat-tail leaves, and all kinds of grasses. Raffia, hemp or shoe thread may be

used for the thread. If raffia is used, it must be split quite fine and kept of uniform size. If too coarse, it covers too much of the coil.

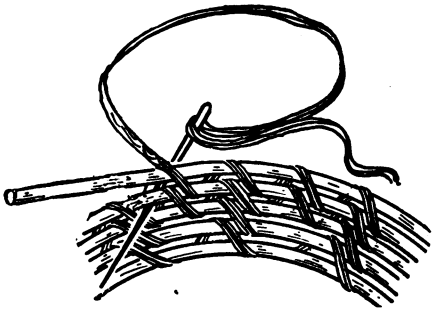


Fig. 76.—Showing the Whip Stitch.

The illustration, Fig. 76, will show the stitch sufficiently.

Care must be taken to bring the thread up at the right and close to the stitch on the preceding coil. When made on a soft coil, the ends can be sewed into the coil, but if made on rattan, the ends must be fastened on the back by weaving back and forth on the stitches so that the right side will present a continuous thread.

XVIII.

A Pomo Stitch.

One of the finest weaves is made by carrying along a strand of raffia on top of the rattan, for the purpose of holding the stitches in the succeeding rows. This is an especially good stitch for plaques. The fineness of the basket will depend upon the size of the thread used.

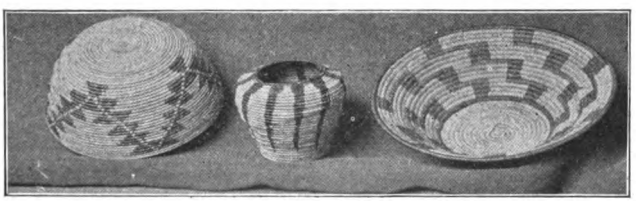


Fig. 77.

Begin the center as previously described in Fig. 46. Place the strand of raffia that is carried along with the rattan down to the shaved point, and wind it in with the rattan, care being taken to keep it on the top of the coil.

After sewing the center, bring the thread up from the back over the uncovered rattan, and pass the needle down between the rattan and the strand of raffia in the preceding coil. Fig. 78. The stitches must be very near together in

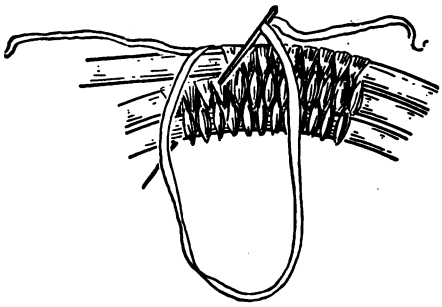


Fig. 78.

order that the fine thread may entirely cover the outside coil. Keep the thread perfectly flat over the coil. As previously stated, if the stitches incline to draw back, wind the coil once between the stitches when needed. This will not affect the distance between the stitches, but it keeps the outside of the coil covered and the stitches on a line with the center.

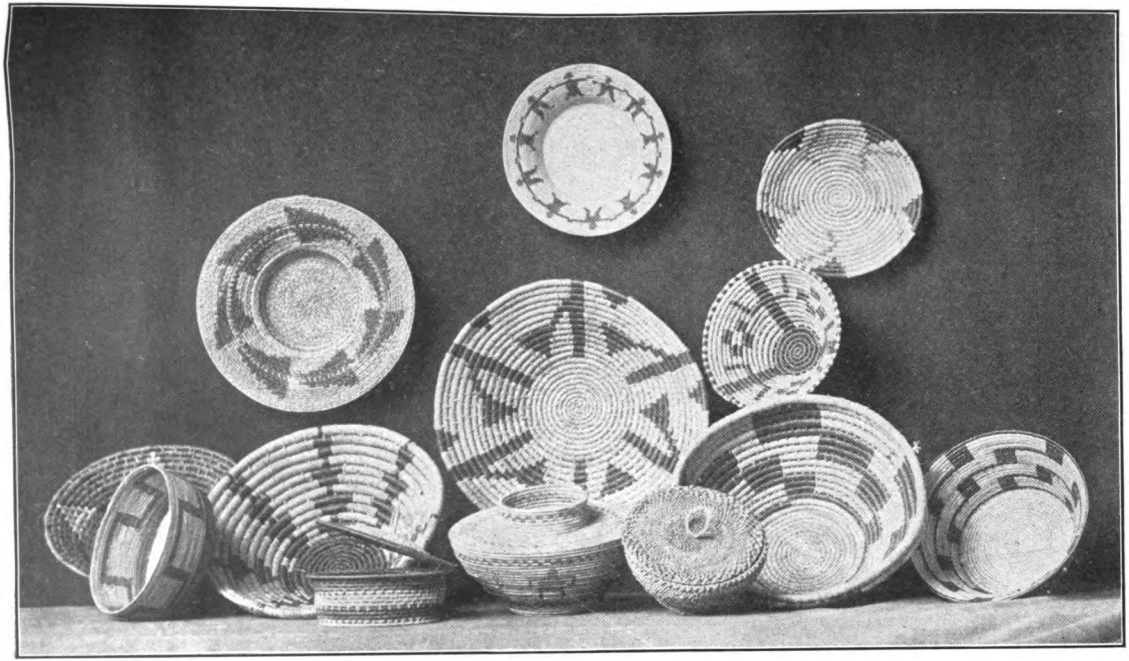


Fig. 79.—Raffia and Rattan Baskets.

XIX.

Basket Made of Flats.

This basket is made from a material called "Flats." It is not what is known as flat rattan. Flat rattan is twice as thick and is used in the manufacture of chairs and baby carriages.

"Flats" is a regular basket material. Cat-tail leaves, flag leaves and rushes may be substituted for it and used in the same way.

Cut seven strips of the material twenty inches long and sixteen fifteen inches long. Dip in water to soften. Lay the seven long strips on a board parallel to each other, the thickness of the material apart. Fasten to the board by pinning in the center of the strips. Brass-headed tacks are convenient for this purpose, as they will hold the warp strips securely. Weave in one of the short strips over and under the long strips near the center where they are fastened to the board. Fig. 81. Instead of weaving the second strip over and under, and trying to force it up close to

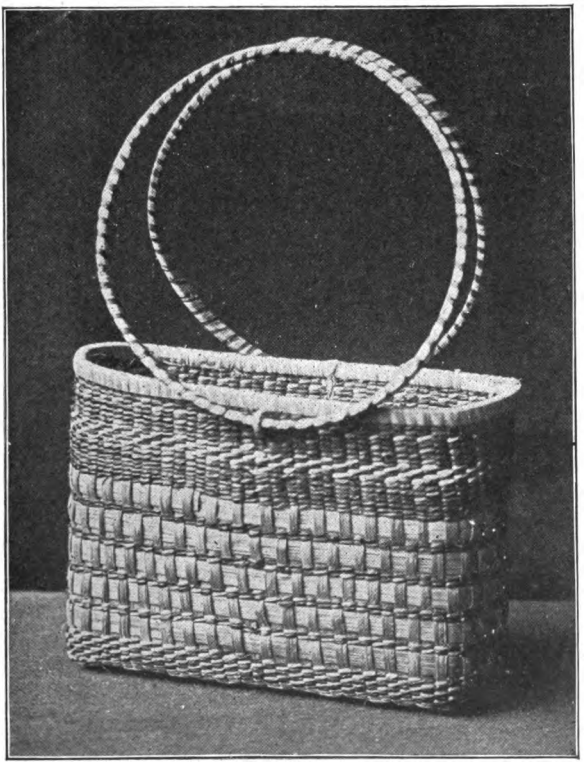


Fig. 80.—Basket made of Flats.

the first, bend up the three under warp strips close to the first short strip. Fig. 82. Place a second short strip in between the three warp

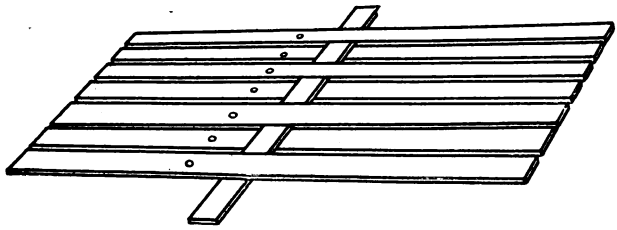


Fig. 81.

strips that are turned up and the four that lie on the board. Then turn the lower warp strips up and the upper ones down, and proceed as before, weaving in eight short strips on each

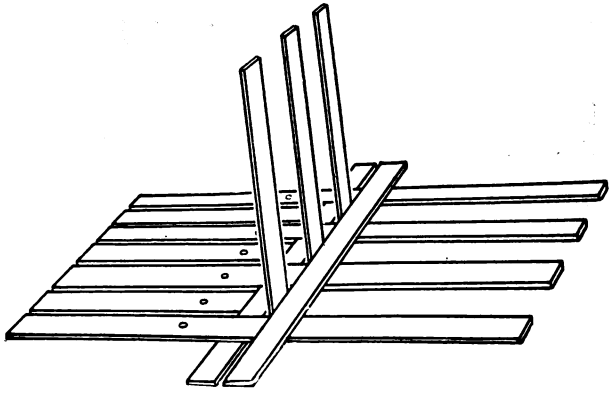


Fig. 82.

side of the center. If the bottom is not closely woven the basket will be unsatisfactory.

Keep the bottom securely fastened on the

board until the edges are bound together by a row of raffia weaving. Take about two-thirds of a strand of raffia split lengthwise, double this in the center and loop it around one of the lower side spokes. Weave around the edge of the bottom, using the twining stitch Fig. 28, care being taken to pull the stitches down close to the edge of the woven bottom. Twist the threads over each other once between the corner spokes. When the starting point is reached tie the threads in a bow knot, as they will be used again.

The bottom of the basket can now be taken from the board. Divide the spokes by cutting through the center lengthwise from the ends down to the twining stitches, making twice as many spokes on the sides as on the bottom.

Tack the bottom of the basket on a block of the same size and long enough to extend an inch beyond the spokes when they are bent up. Untie the raffia that was used on the first row of wide spokes, and continue to weave around the divided spokes in the same way, using the same stitch—twining stitch. Care must be taken to draw each thread as it passes around a spoke down close to the preceding row.

After weaving seven or eight rows, a plain strip of the material can be placed around the basket, over and under the spokes in the same

way that the bottom was woven by bending back every other spoke and pinning the strip to the block down close to the weaving. Pass the raffia weavers up behind this strip and bring them to the outside, one on each side of an outside spoke. Continue to weave as before.

In the illustration there are two rows of weaving between each strip until five have been added. The top is finished with about one inch of weaving.

In splicing the thread, the strand that is to be spliced should be carried forward and the new thread placed with it, allowing the end of the new thread to run up beside the spoke. When the back strand is brought forward, it will firmly bind it. Weave two or three times around with the end in this position, and then cut it off close to the spoke.

The ends of old threads may be carried up on the spokes and fastened in the same way, thus concealing the ends of all threads. The end of the plain strip should be lapped behind a spoke.

If the weaving is done too tight it may be difficult to take the block out. This can be overcome by adding on the sides of the block three or four thicknesses of newspapers, at different times as the basket is being made. It will increase slightly the size of the basket toward the top. When finished, pull out the

paper and then the block will slip out easily. This basket may be made without the block if the bottom is fastened securely to a board.

After the basket has been removed from the block wet the ends of the spokes thoroughly down to the weaving, but no farther. Take a strip of the material long enough to go around the basket without lapping. Cut off about one-third of the width. Scrape the wide strip until very thin. Weave this over and under the spokes like the preceding strips, bringing it down close to the weaving.

Turn all the outside spokes down, over the strip just inserted, into the inside of the basket. Sew these down firmly with a small thread of raffia, and then cut them off on the inside, at the lower edge of the strip. Cut off the inside spokes that have been left upright at the upper edge of the strip. Now take two more strips, full width; shave thin. Place one on the outside of the one just inserted, allowing it to come down just to the upper edge of the weaving. The other is placed opposite on the inside, covering the turned down spokes. Bind these strips together with raffia, sewing between and through the spokes. The strips may be entirely covered or space left between the stitches showing the uncovered strip. Care must be taken so that the edge will not be too thick.

The ends of the spokes may be shaved thin before turning down, thus reducing the thickness.

Color may be introduced in different ways, either using one strand of the natural color and one strand of any desired color, or both strands may be of the same color. The spokes and bottom may also be colored by dipping in a dye after the bottom has been woven and the spokes cut. If colored before cutting, the edges of the spokes will be of a lighter color.

If the narrowest width of "flats" is used, the spokes need not be cut. A finer basket is

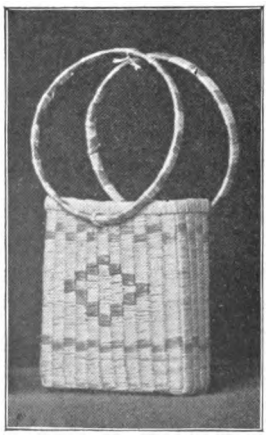


Fig. 83.

made, however, by using the narrowest width and cutting the spokes.

The weaving may be continued up the sides without the plain strips, using different rows of colored raffia for decoration.

Baskets of this material can be made in a great variety of shapes. The basket just described may be made only two inches deep, instead of four and a half, as in the illustration, or the same block can be laid on its side and a basket made over it, thus making an oblong basket suitable for photographs.

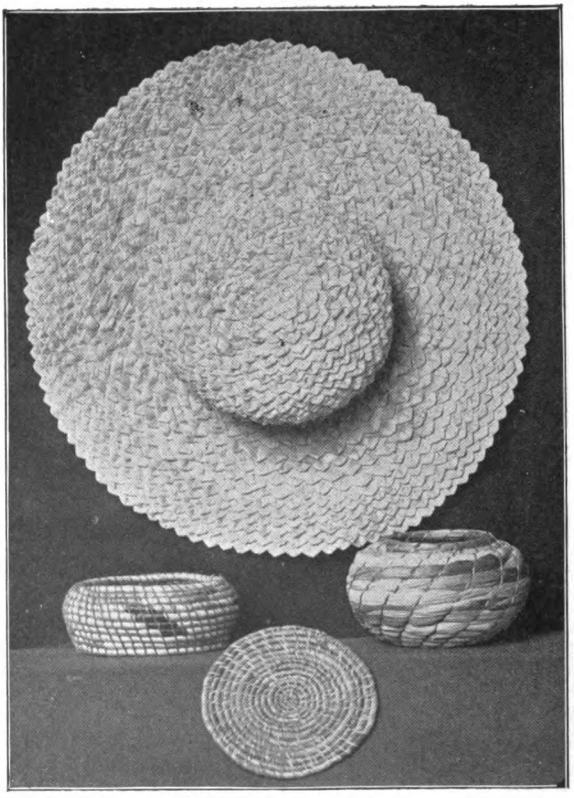


Fig. 84.—Articles made of Corn Husks.

XX.

Corn Husks.

Corn husks used in different ways furnish an inexhaustible supply of material to the skillful worker. The inner leaves that cover the ear are fine, soft and durable. When used they should always be damp.

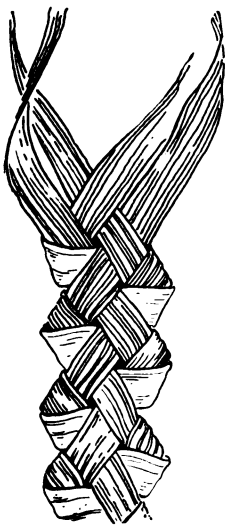


Fig. 85.—Braid made from Corn Husks.

If the husks are selected with care, rich, permanent colors can be secured, or they may be stained by dipping in any dye desired.

An endless variety of articles can be made by using the husks in plain and fancy braids—Fig. 85—table mats, floor mats, porch pillows, picture frames, hats and baskets.

In braiding with the husks, the ends are lapped a half inch and braided in.

The husks can also be used for the roll in a sewed basket. The whole roll may be made from the husks, or a roll made of straw; or grass may be covered with the husks and sewed together with raffia or hemp, using the whip stitch. Fig. 76.

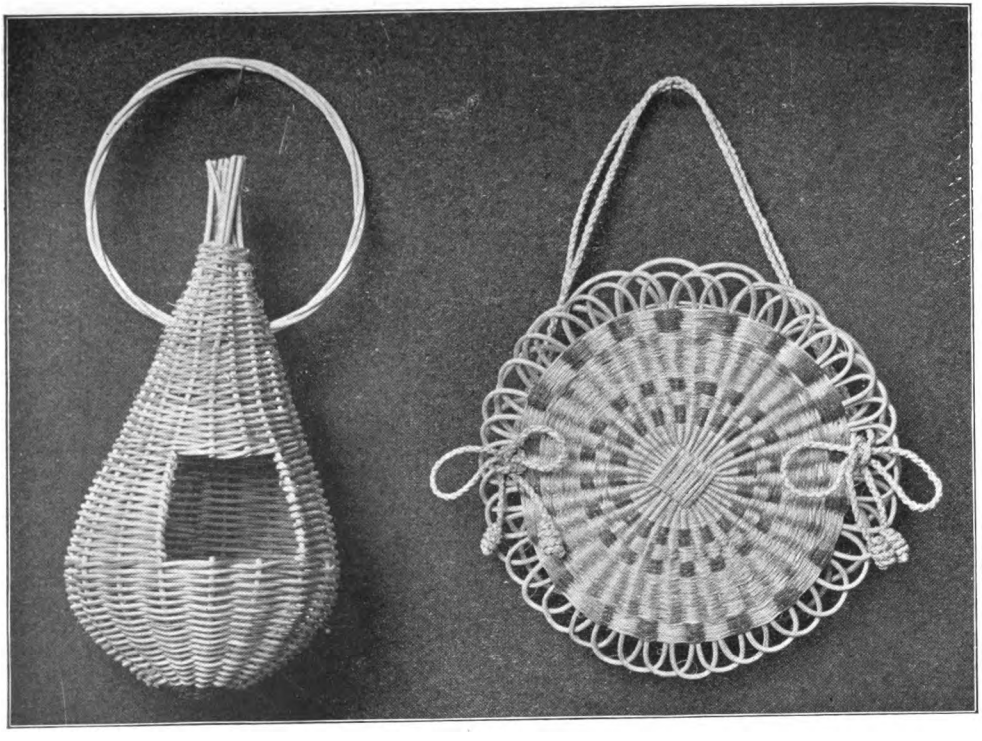


Fig 86. – Birds'Nest and Whisk Broom Holder.

XXI.

Basket Work Graded.

When we consider the variety of industrial work that is suitable for the school-room—cord work, paper-folding, weaving, basketry, and whittling, it would seem that the only difficulty presenting itself in making a course of study would be the danger of overcrowding.

The grading of basket work, as suggested below, is the result of several years experience.

GRADES 1 AND 2.

1. — Picture Frames — round, oval, and square. Fig. 6. These are made by cutting the desired shapes from cardboard—old pasteboard boxes may be used—and winding with raffia, joining the strands by tying at the back. The older pupils may use straw for this purpose. See Fig. 87. When winding with straw begin to work with the large end, thus leaving the small end to be pieced. Allow this to run one-half inch inside of the large end of the next

straw. Continue the work, always joining at the back.

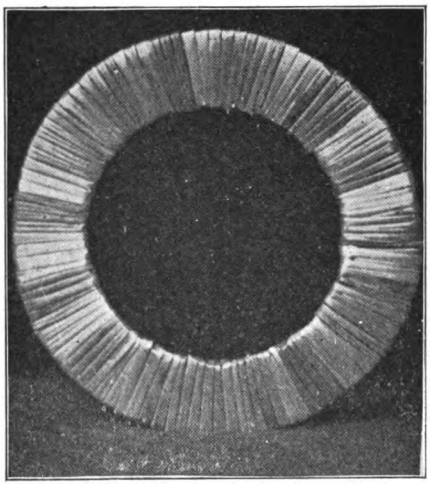


Fig. 87.—Straw Frame.

2.—A very pretty round box may be made by cutting out two round pieces of cardboard five inches in diameter, for the top and bottom. Cut a hole in the center of each, five-eighths of an inch in diameter.

A strip of cardboard is then cut two and three-eighths inches wide, and long enough to make the side of the box, so that the cover and bottom will come just over the edge. Sew the side strips together and wind with raffia. Wind the cover and bottom in the same way by passing the strand of raffia through the hole in the center and over the outside edge. To add in-

terest, color may be introduced. When wound, the bottom may be sewed on the side, using a whip stitch. If sewed around the second time

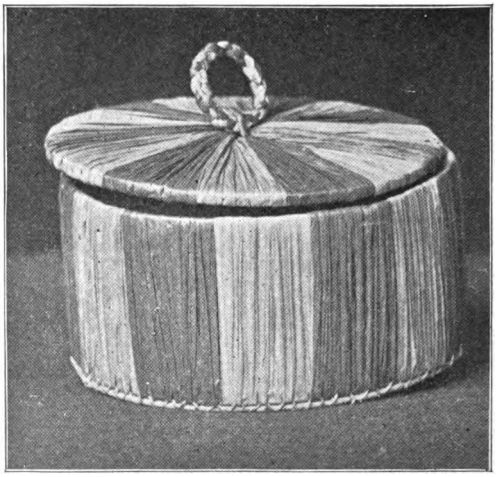


Fig. 88.—Work-box made of Cardboard and Raffia.

with the stitches running in an opposite direction, they will form a cross stitch which will make it firm and give a neat finish. The cover may then be fastened on at one side, and a ring attached in the center. Fig. 88.

3.—Oblong or square mats may be woven with raffia, the younger pupils using a cotton warp and the older ones using raffia for both warp and woof. The raffia should not be tied, but allowed to lap two inches. If raffia is used for the warp, all the ends should come at the

end of the mat. When taken out of the loom they may be run down beside a warp strand, thus making the surface neat and smooth.

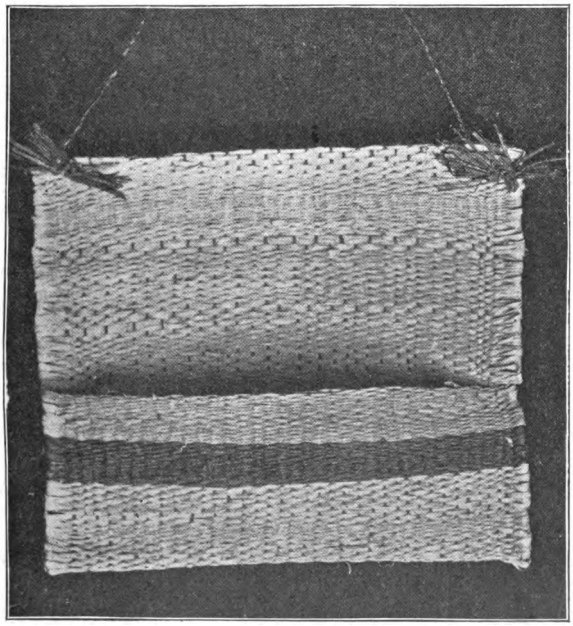


Fig. 89.—A Letter Holder.

These woven pieces may be made into a great variety of articles that will suggest themselves to an ingenious teacher (see Fig. 89) —comb cases, letter-holders, cornucopias, etc.

GRADE 3.

1.—Knot-stitch mats (see Fig. 90).
2.—Knot-stitch baskets. (See Fig. 49)

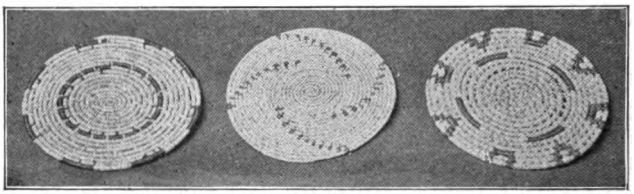


Fig. 90.—Mats made by 3rd Grade Pupils.

This work can be given in two ways, either by dictation, giving the stitch first on pieces of rattan, and *then* the center, or by individual instruction, teaching it to a few older pupils, and then allowing them to teach others.

3.—Rattan work, mats and simple baskets.

GRADE 4.

1.—Braiding.
2.—Soft coil basket. (Chapter 14.)
3.—Rattan work.

Cat-tail leaves and rushes can be braided and used with the rattan.

GRADE 5.

1.—Flat rattan. (Chapter 13.)
2.—Whip stitch on rattan, grass, corn husks.
3.—Rattan and willow work.

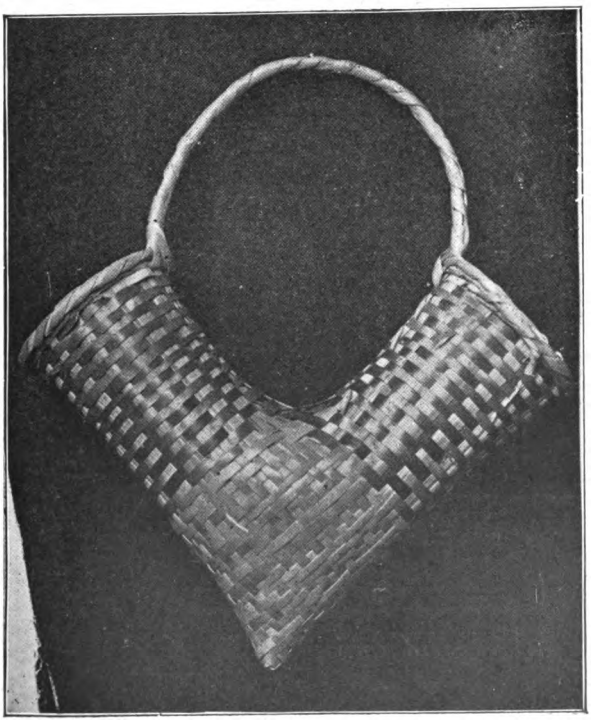
GRADE 6, 7, and 8.

1.—Strap stitch.

2.—Buttonhole stitch.

3.—Use the flats or any substitute—cat-tail leaves; rushes.

4.—Any desired shape of plaque or basket may be used.



A Choctaw Basket.

(Made by the Choctaw Indians of Louisiana.)

XXII.

Coloring.

In selecting colors for baskets or any other work, one should realize what an important factor color is in the artistic development of the child, and how much this development has to do with his happiness and well-being.

Color in baskets is very attractive, but if one wishes to secure the best results he should avoid the brilliant colors, which are in too great a contrast to the other material used.

It is advisable for the beginner to use, besides the ground work, only one color, and very little of that. One will make no mistake if he uses some shade of brown, since it harmonizes perfectly with the natural color of raffia and rattan.

If one would utilize all the different tints of the natural material, he would need very little aid from the dyer's art.

Dealers in dyewood and barks—druggists—can supply nearly all the vegetable extracts

for the different colors. An enthusiast may find for himself in the blossoms, fruit and roots of plants very desirable dyes.

Raffia should always be soaked in water before immersing in any dye or mordant. Never boil the dye after the raffia has been put into it, as directed for cloth or yarn, for it will rot or burn the raffia.

Rattan needs to remain in the dye but a short time, since it is porous and will take color very quickly.

Brown.—Raffia, like the squaw-grass of the Pacific slope, will become a light brown if soaked in water for a number of days. If soaked in copperas water, it will give both light and dark shades.

Extract of logwood, 1 ounce in two pailfuls of water for one pound of raffia makes a good brown. No mordant should be used with this.

Walnut roots or green husks of the nut, butternut bark, alder and willow bark, all give satisfactory shades of brown.

Yellow.—No. 1.—Gather two pailfuls of the golden rod blossoms. Place in a bright tin boiler and cover with cold water, allowing the water to boil for twenty minutes. Strain and add a piece of alum the size of an egg. This makes a very effective dull yellow.

No. 2.—Soak the raffia over night in a mor-

dant or fixing bath made of alum, one-half pound to one pound of raffia, with water to cover. Dilute one ounce of extract of fustic in two pailfuls of hot water. Drain the raffia and put into the dye, stirring constantly until the required shade is obtained.

No. 3.—Saffron, 1 ounce to a gallon of water. Alum mordant.

Orange.—No. 1—Cochineal added to a fustic, made as for yellow, makes a good orange.

No. 2.—Annotto makes an orange.

Red.—Mordant the raffia with six parts of stannous chloride crystals and four parts of cream tartar. Boil the cochineal and strain, allowing the raffia to remain in the dye until the desired color is obtained. Pokeberry will also make a red.

Bottle Green.—For a mordant, make a boiling solution of one-tenth of a pound of chrome and one-fifth of a pound of alum, allowing the raffia to remain in this for a few minutes until it is thoroughly saturated. Take the raffia out and have another boiling solution of three pounds of fustic and one and one-half pounds of logwood chips. Put the raffia in this and allow it to remain until the desired color is obtained. This amount makes a dye for ten pounds of material.

Light Green.—Boil sage leaves and set with alum.

Steel Color.—Sumach fruit treated in the same way as the golden rod and set with alum makes a dark steel. This is much better to use than black when a mass of dark is desired.

Black.—Dissolve one ounce of extract of logwood in two pailfuls of water, and add a piece of copperas the size of a walnut. It takes a longer time to color this than any other color. Wash and rinse thoroughly after dyeing, otherwise it will crock.

XXIII.

Cord Work.

Cord work is so simple that it can be easily dictated to large classes. It gives employment to both hands equally. It teaches concentration and arouses the inventive and designing faculties. This work is especially adapted to small children.

Materials.—Any kind of cord may be used. Macrame, staylacings, shoestrings, or common wrapping cord will give very satisfactory results.

In school districts where there is no fund with which to purchase material for industrial work, the pupils may be asked to bring pieces of twine from home. After a quantity has been collected, it might be dyed some desirable shade. The preparation of material will add interest to the article made.

TIE KNOT—ONE STRING.

Give to each child a piece of string about a yard long. Place the two ends together in the

right hand and let the loop hang down. Tie the first knot in the middle by placing the forefinger of the left hand in the loop and bring the end that is between the forefinger and the second up around the forefinger towards the

Fig. 91.—Tie Knot of one String.

thumb, then carry it over and through the loop, and pull tight. Fig. 91.

Draw the knot just made down into the left hand and tie the second knot about an inch from the first. Continue tying knots until the half of the string is used. Turn the string and tie the other half in the same way. If the first knot is tied in the middle of the string it will be easier to pull the short end through than if the work was begun at one end.

These knotted strings may be utilized in various ways. If all are of the same size and color they might be used to make a fringe on a spread for the teacher's desk or table. Plain or mixed denim would be an excellent material for this purpose. Care should be taken to have the spread and fringe harmonize in color. Color harmony is of the greatest importance in industrial work, and should never be neglected. Plain burlap would also make a serv-

iceable spread, using some contrasting color for fringe (brown or green). If one wishes the knotted strings might be sewed around the spread in rows just above the fringe, or in some square design. The older pupils would enjoy doing this, thus fostering the community interest.

TIE KNOT OF TWO STRINGS.

Use two strings, hold them together and tie

Fig. 92.—Tie Knot of two Strings.

the knot in the same way as with one string. Fig. 92.

FRINGE KNOTTING.

Take three strings, double each one, and tie a knot, using both ends, about one inch from the end of loop. In this exercise, if the center string is of a different color, it may help the pupil to see more readily how the strings are tied. Place these knotted strings on the desk so the knots will lie side by side (Fig. 93), thus making three knots in the first row. There will be only two knots in the sec-

ond row. The third row will be like the first. (Fig. 94.)

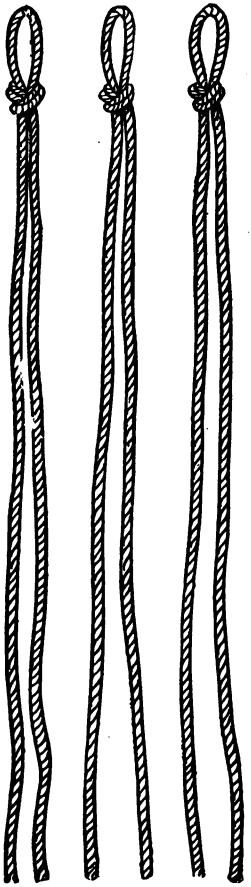


Fig. 93.—Fringe Begun.

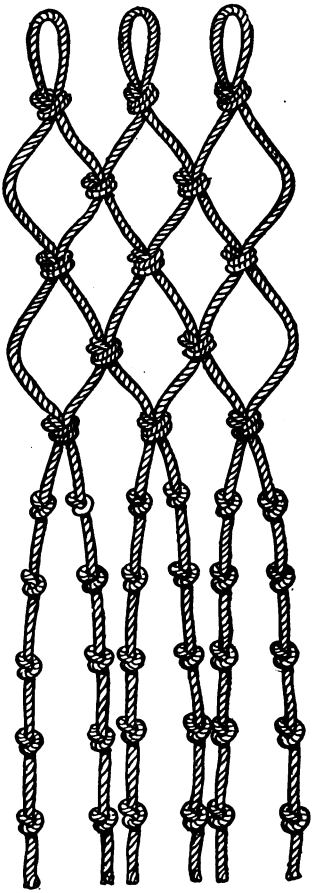


Fig. 94.—Fringe Completed.

Continue to knot in this way for five rows, then tie knots in each string.

After a very little practice in fringe knotting the pupil can very easily make a bag or hammock. With the smaller children it would be better to use a coarse cord for the first effort (shoestring or lacing-cord). Raffia may also be used for a hand-bag or a sponge-bag for the bathroom.

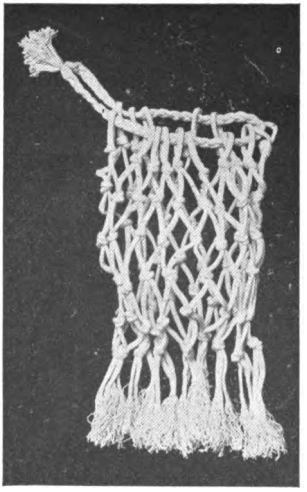


Fig. 95.—Knotted Bag.

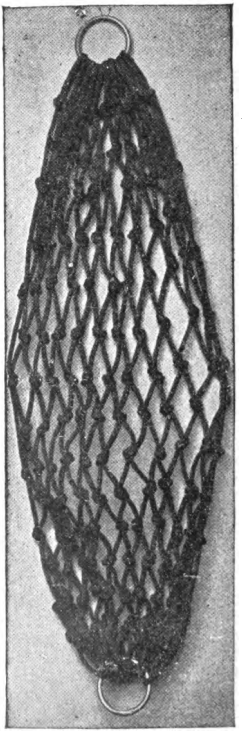


Fig. 96.—Knotted Hammock.

A Single Chain Stitch of One String. (Fig. 97).

This may be made by holding the work in the left hand, and with the thumb and finger of the right hand pull a new loop through the loop already made.

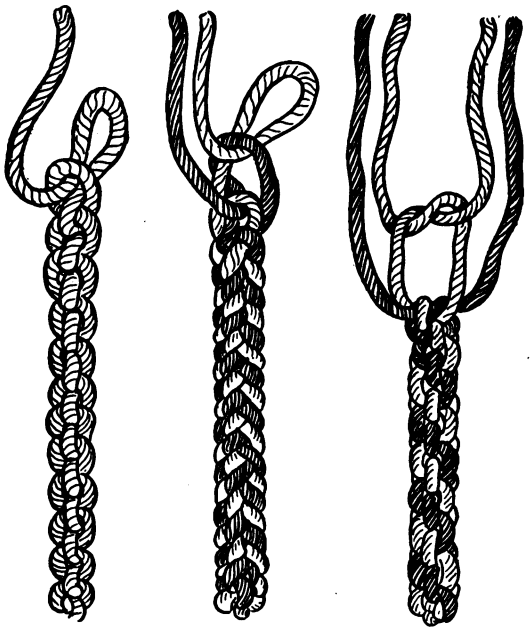


Fig. 97. Fig. 98. Fig. 99.

A Chain Stitch of Two Strings (Fig. 98).

Hold the work in the same way as in Fig. 97, and pull through first one string and then the other, for the new loop. This makes a three-sided cord. It may be made with different colored strings.

A Spiral Cord of Two Colors. (Fig. 99).

It is formed by a succession of simple knots, one on top of the other, on the inside of the

Fig 100

Fig. 101.

Fig. 102.

cord. Take two strings of different colors. Tie a knot in the middle of one over the middle of the other. Now tie a second knot directly on top of the first, using the under strings or the ends of the one that was tied into the first knot. The third knot is tied directly on top of the second, using the two strings that made the first knot. Continue to tie knots in this way,

by using first one color and then the other. This makes a very desirable cord. It may be used to finish the edge of a pincushion or sofa-pillow. It may also be used to good advantage for mats either for the dining-room table or other places.

A Single Chain of See-Saw Knots. (Fig. 100).

In making this, two strings of different colors should be used. Hold one string straight

Fig. 103.—Corkscrew

Cord. Fig. 104.

Fig. 105.

and tie the other around it. Then reverse strings, first holding one straight and then the other.

A Double Chain of Sea-saw Knots. (Fig. 101).

Use four strings, two of one color and two of another. Tie the same as in Fig. 100, using the two strings in the same way as if they were one.

Combining Single and Double See-saw Knots (fig. 102)

The illustration shows how this is made. Use

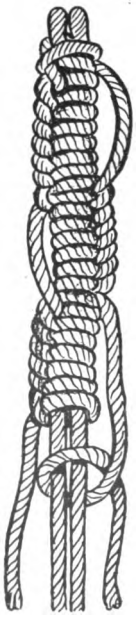


Fig. 106.—Waved Bar.

Fig. 107.

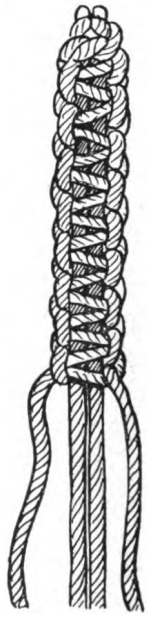


Fig. 108.

four strings, knotting each two together for a certain number of knots, as in Fig. 101.

One can see how a bag could be made with almost any cord, by uniting the different strands at regular intervals.

Corkscrew Cord. (Fig. 103).

Three strings are required, one being much longer than the other two. Hold the two shorter strings straight for the foundation and work the third one around them by using a

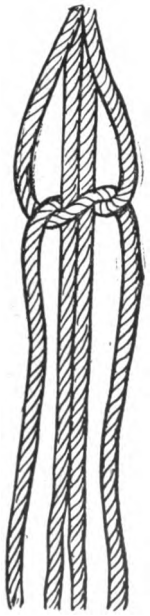


Fig. — 109 Left Hand Knot (1st Step.)

Fig. 110. — Right Hand Knots (2d Step.)

simple buttonhole stitch. The twist is obtained by carrying the string with which the knot is made around behind the foundation strings, once every ten stitches.

Single Genoese Braid. (Fig. 104.)

Use four strings, two for the straight foun-

dation and the other two for knotting. The knot is the same as Fig. 103, making a knot first on the right with one string, then a knot on the left with the other. This may be varied in many different ways, as in Fig. 105 when two knots are tied on one side by the same string and then two on the other side with the other string, or, as seen in Fig. 106, where seven knots are tied on one side, then the other string is brought straight down beside the knots already made and seven knots are tied with it.

BANISTER BAR. (FIG. 107.)

This is made like the first half of the Solomon's knot and then repeated.

Many other knots might be given. The most of these knots were used in the Macrame lace work that was so popular several years ago. There are several books on the market, published at that time, which give a greater variety of knots if one wishes to go into the mystery of knot-tying more deeply.

SOLOMON'S KNOT. (FIG. 108.)

This knot is used in making bags, hats and other fancy work with raffia (Fig. 40). It requires not less than four strands, and many more are often used. There are two steps in the completed knot, first tying a knot with the left-hand strand (Fig. 109), and then with the right (Fig. 110).

Spool Work.—Making a cord through a spool is a fascinating and useful work for small children. Wool and cotton yarn may be used for this purpose.

There are spool knitters on the market which sell for five cents each, but one can easily be made from an ordinary spool, which may be brought from home.

Four headless brads an inch long should be driven into one end of each spool for one-half their length. They should be equi-distant from

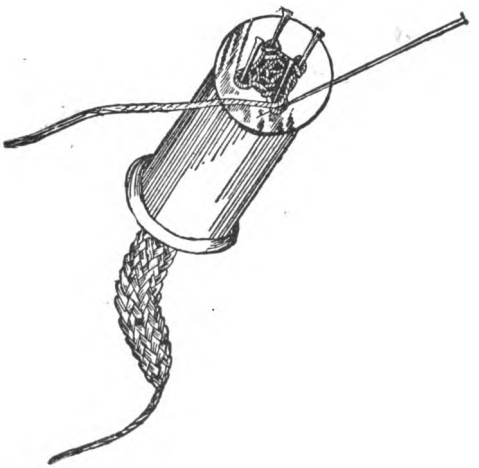


Fig. 111.—Spool Knitter.

each other and near the edge of the hole. A large pin, darning needle, or piece of wire may be used to carry the loops over the thread.

The work is commenced by taking the spool in the left hand, and with the right placing a loop of yarn over each brad. The short end of the yarn is passed through the hole in the spool and drawn out at the opposite end. Carry the yarn around to the left above the loops and lift them with the long pin (Fig. 111) up over it, allowing the loops to fall into the center. The yarn left around the brads will form new loops. Pull on the yarn at the other end of the spool; this will keep the cord even.